FLORIDA WILDLIFE

Volume 48, Number 1 January-February 1994

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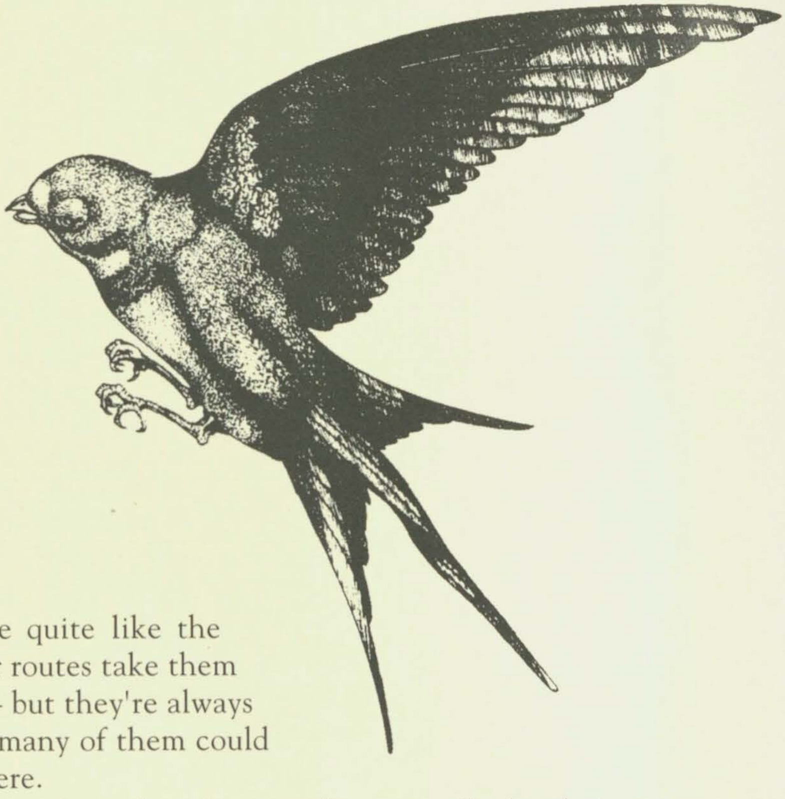
Frequent Fliers Deserve Special Care.



There's nothing in nature quite like the sight of migrating birds. Their routes take them thousands of miles each way – but they're always on schedule. Unfortunately, many of them could be on a one-way trip to nowhere.

Destruction of the wild places where these frequent fliers nest, feed and winter is causing drastic declines in their populations. Please join us in making sure our migratory friends enjoy smooth flights. And happy landings.

Write:

U.S. Fish and Wildlife Service (MBMO)
Dept. of the Interior
Washington, D.C. 20240

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FLORIDA WILDLIFE

Volume 48, Number 1 January-February 1994

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Fish Commission 1994
Publisher

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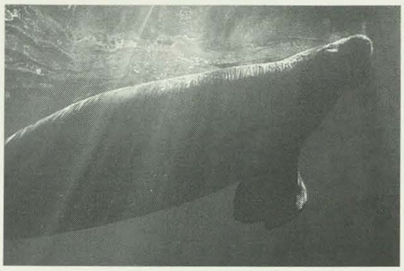

Now's the time to see manatees. Susan Cerulean's article on page 10 details where to observe these shy, harmless mammals – and how to do it responsibly.

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Covers

The front cover photo by Lemoyne Johnson of a burrowing owl received honorable mention in the FLORIDA WILDLIFE photo contest. See photo contest winners pages 18-23. Our back cover of a Harris' hawk on a Mayan Stele was painted by the late Clark Frazier. See "Tribute to an Artist" on page 24.

Acknowledgements

FLORIDA WILDLIFE wishes to acknowledge the support of Tamara Garrett, office manager; Rebecca Rhodes, promotion specialist; Scott Ball, consulting editor; Cheri Barineau, circulation assistant; Sonia Regner, art intern; and Bill Greer, contributing photographer.

Printed on recyled paper.

STATE LIBRARY OF FLORIDA JAN 4 1994

WILLIAM A. GREER

Commission Hosts Wildlife Conference

By Henry Cabbage

An estimated crowd of 500 Floridians and visitors joined the Game and Fresh Water Fish Commission in exploring the "Legacy and the Challenge" of wildlife stewardship Nov. 5-6. The Commission celebrated its first half-century of service by issuing an open invitation to its conference at Haines City.

One of the highlights of the conference was the display of 105 native and three exotic reptile and amphibian species in an exhibit designed by wildlife biologist Kevin Enge. Wildlife biologists Paul Moler, David Cook, Nick Wiley and Mark Robson assisted Enge in rounding up, borrowing and otherwise arranging for creatures to show.

Equally important was the display of live freshwater fish from throughout Florida. After the conference, some of the fish – the species occurring naturally in the waters of the Haines City vicinity – were returned to the wild; others were turned over to Sea World which had donated an aquarium for the fisheries display, designed and operated by fisheries biologists Rick Stout and Paul Thomas, and project leaders throughout the state.

In addition, each division and office of the Commission and various associations presented displays to detail their contributions to conservation. Exhibits were open to the public at no charge, and even hotel staff spent off-duty time marveling over the wonders of Florida's fish and wildlife.

Youngsters, many of them with a devouring curiosity about wildlife, were fascinated by the displays and delighted by the presence of scientists who could give authoritative answers to their questions.

Meanwhile, visitors were especially awed by the high-technology equipment the Commission channels into its duties. Helicopters, airboats, shocker boats, the famous boat Green Thunder and other equipment were displayed on the conference center lawn. Canine units of the Commission also were demonstrated.

At the same time, the Florida Audubon Society displayed live raptors such as hawks, kestrels and a bald eagle.

Back inside the conference center, one room was set aside to exhibit memorabilia from the early days of the Commission. Next door, projectors continuously presented programs about the agency's accomplishments and projects.

During the two days of discussion sessions, experts from Florida and elsewhere drove home the point that the wildlife heritage enjoyed by

Floridians is a great one, and so are the challenges facing those who must conserve it. Topics like "The Future of Sport Hunting" and "Innovative Regulations for Management of Sport Fish Populations" set the tone of the first session on the subject: "Recreational Use of Fish and Wildlife Resources."

Session 2 focused on "Habitat Issues: The Next 50 Years." Speakers addressed the plans, strategies and course of habitat protection in an age when natural habitat is vanishing at a staggering rate in Florida.

The first day ended with an after-hours social gathering. Simultaneously, the Florida Wildlife Federation conducted a silent auction to raise funds for conservation efforts.

Day 2 of the conference began with a historical presentation by Commission chairman J. Ben Rowe, followed by a dramatic address by Col. Robert M. Brantly, retired executive director of the agency. Brantly spoke of the agency's 50 years of resource stewardship for this state, then introduced keynote speaker, Jerry Conley, director of the Idaho Department of Fish and Game.

The delicate issues concerning exotics and endangered species drew large audiences to hear experts reflect on the agency's role in solving the problems that are, in many ways, nearly unique to Florida. The state has more endangered species than any other state but California, and more non-native species breeding in the wild than any other state except Hawaii.

Perspectives came from biologists who cope on a scientific level with the complications of having non-native plants and animals thriving in the wild, as well as from wildlife inspectors who frequently are called upon to capture escaped exotic animals that pose dangers to the public. In the forum on endangered species, representatives from both the biological and economic communities drove home the fact that the state's determination to protect listed species is, in reality, pitted against the economic consequences of imposing restrictions on uses of areas where they occur.

DICK SUBLETTE

Lt. Mikel Suelter, assistant boating safety coordinator, was one of many Commission experts on hand to answer questions and to distribute information.

Another topic to pose complicated questions was the subject of "Protection and Conservation of Individual Animals." Frequently, conflicts arise between the interests of individual animals and the welfare of animal populations.

The final event for the conference was the awards banquet, co-sponsored by the Wildlife Alert Reward Association.

A solemn item of business during the banquet was a moment of silence in remembrance of Clark Frazier, the gifted wildlife artist and Commission employee who designed many of the displays and worked hard to resolve every detail of the conference during the planning. Frazier died of heart failure Oct. 8.

Col. Robert M. Brantly was inducted into the Florida Wildlife Federation's Conservation Hall of Fame for his service in the cause of conservation since he first went to work for the Commission in 1957.

Others honored during the banquet were: Sandra Kokernoot, Land Conservationist of the Year; Richard Coleman, Water Conservationist of the Year; Shawn Packham, Youth Conservationist of the Year; David Jones, the Francis S. Taylor Outdoorsman of the Year; Christine Dummit, Conservation Communicator of the Year; Marian S. Winters, Conservation Educator of the Year; The North Florida Chapter of Safari Club International, Conservation Organization of the Year; Congressman Pete Peterson, Forest Conservationist of the Year; Rep. Everett Kelly and Sen. Curt Kiser, Legislative Conservationists of the Year; Paul Shafland, Wildlife Conservationist of the Year; and Leroy Wright, Conservationist of the Year.

The Everglades Coordinating Council hosted conference participants with a hospitality room both nights of the conference, serving alligator tail and other refreshments.

Henry Cabbage is a public information director in the Commission's Tallahassee office.

A Bundle of Energy

By Lenela Glass-Godwin
Photographs by James C. Godwin

Do you have a few extra pounds you'd like to lose? Take heart, it could be worse. Imagine how much you'd weigh if you ate anywhere from one-half to two times your body weight daily! That's what shrews do, yet these mouse-sized insect-eaters are the smallest mammals in North America.

What's the key to a shrew's ability to eat and eat but still weigh less than an ounce? As with some lucky people, a fast metabolism does the trick. A shrew's heart beats around 700 times a minute – even faster when it's scared, then hovering around 1,200 beats per minute. In the time it takes for you to breathe in and out once, a shrew breathes 10 times. And because it is so small, a shrew has to expend lots of energy just to maintain a constant internal body temperature. In other words, in order to keep warm (or cool, as the case may be), a shrew has to eat almost constantly.

Florida is home to three species of shrews – the southeastern shrew, the southern short-tailed shrew and the least shrew. Like all shrews, these have long, pointed noses, plush fur and small, beady eyes. Active both day and night, they have very poor eyesight. What they lack in visual acuity, they make up for with excellent hearing, a rather good sense of smell, and a highly-developed sense of touch. These talents enable them to locate and devour prey, including a variety of insects, earthworms, snails, small snakes, salamanders, and even mice much larger than themselves. The short-tailed shrew has another weapon in its predatory arsenal – a potent venom in its saliva. Only one other mammal in the world, the duck-billed platypus of Australia, possesses such a venom.

Many shrews also are endowed with a musky odor, which some people have compared to the smell of decaying garlic. This may keep them from being eaten by some other mammals, but avian predators such as barn owls are not deterred. In fact, mammalogists monitor shrew populations in certain areas by checking for their skeletons in barn owl pellets.

We rarely see shrews because they spend most of their time in burrows and runways under leaves of surface litter in moist woodland, grassland, marsh and old field habitats. They will also borrow ready-made burrows of rodents and moles. Shrews build nests of grass, leaves and other shredded plant material under decaying logs or stumps, or in deeper burrow systems a foot or more beneath the ground. Some nests for resting are built in surface runways.

Florida shrews have a long breeding season, extending from February through November. The number of young born varies from three to 10 depending upon the species, and most

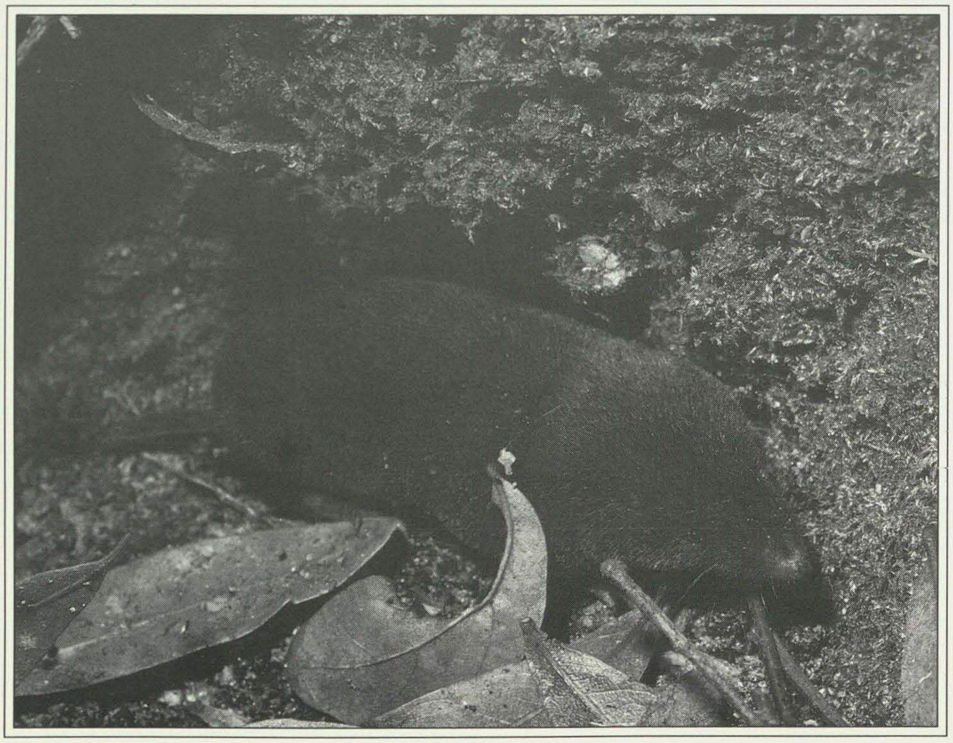
Blarina carolinensis

females produce several litters per season. Baby short-tailed shrews weigh slightly more than a gram at birth (15-25 grams as adults), but the newborn southeastern shrew may weigh as little as .25 gram (3-5 as adults). The young may double their weight during the first week. Shrews reach sexual maturity by three months of age.

To those of us watching our weight, it may seem that shrews have it made. After all, they can eat to their heart's content and never gain an ounce. But life in the fast lane has its price. Because fast metabolism takes its toll on a system, few shrews make it past their third birthday!

Lenela Glass-Godwin is a wildlife biologist and writer who lives in Alabama. She previously worked as a nongame wildlife education specialist with the Commission.

Cryptotis parva



Sculpture to Fund Restoration of Schoolyard Habitats

By Tim Roach

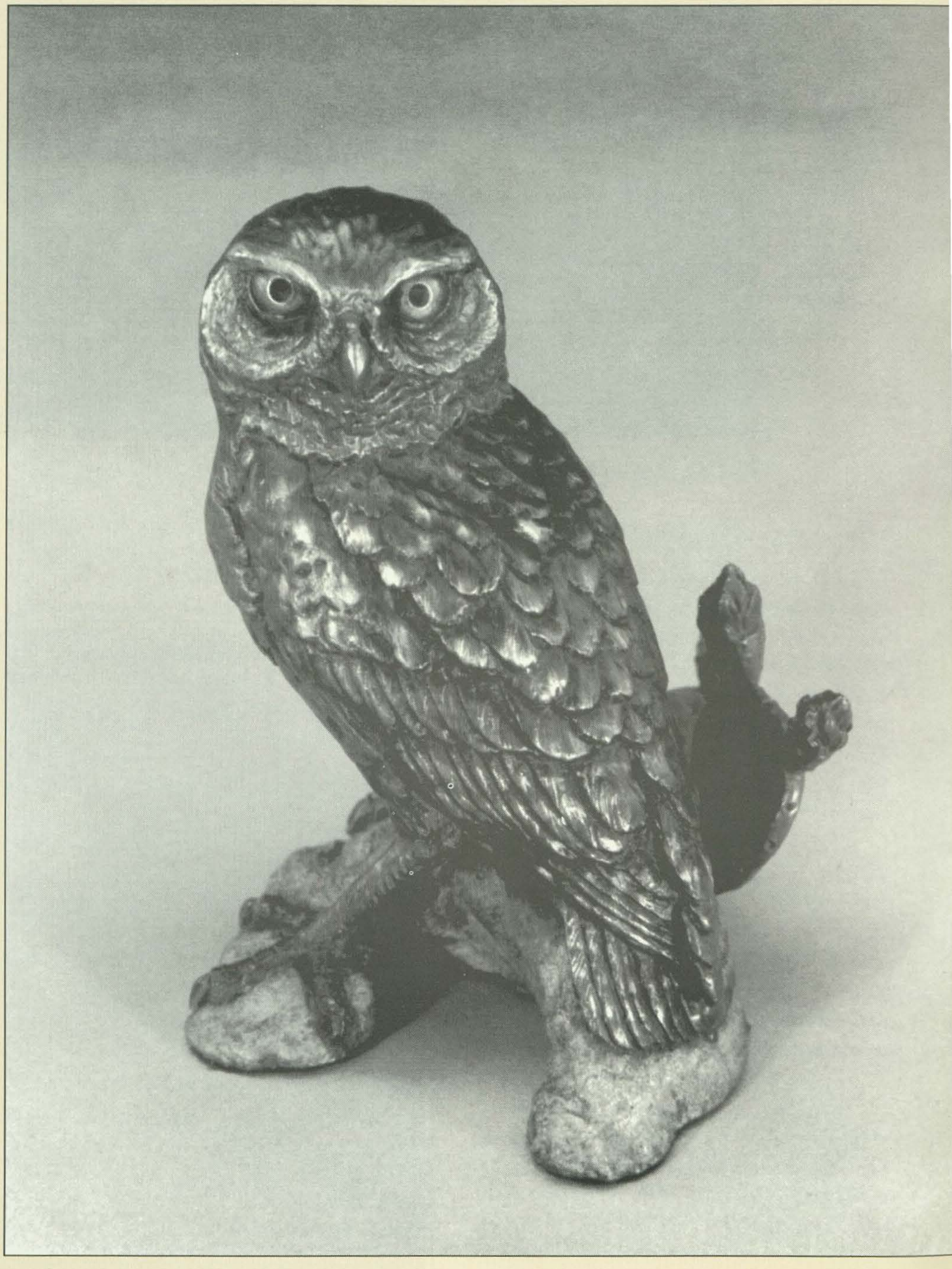
A new, trend-setting addition to the Florida Game and Fresh Water Fish Commission's Project WILD program literally puts the future of Florida's environment in the hands of its children.

The Florida Project WILD Action Grant Program (FPWAGP) awards small grants to educators for the creation, restoration or enhancement of wildlife habitat sites on school grounds. The program, which is beginning to take shape nationally as the next wave in environmental education, focuses on "hands-on" student involvement as a way to develop awareness, appreciation and concern for wildlife. It not only encompasses wildlife studies, but also stresses the restoration or maintenance of native ecosystems as habitats necessary for the survival of wildlife.

In the spring of 1993, Florida's Project WILD program received $6,000 in seed money from national Project WILD to implement this grant program. The money was made available by the Phillips Petroleum company and the U.S. Fish and Wildlife Foundation. Florida was one of 25 states eligible for the funding and one of 18 to actually receive it. The program is being jointly administered by the Commission and the Florida Wildlife Federation.

The rationale behind establishing wildlife habitat sites on school grounds is twofold. First, it will instill stewardship ideals in students, and secondly, in conjunction with providing habitat for wildlife, it will help the students realize that, by their actions, they can have a positive impact on wildlife.

You now have an opportunity to get involved in such projects, through



Burrowing owl sculpture by David Turner financial contributions, by purchasing a limited edition, bronze wildlife sculpture by David Turner of Turner Sculpture. The sculpture, shown here, is of Florida's burrowing owl, listed as a "species of special concern" and thus protected.

The Florida burrowing owl was chosen to be the first sculpture offered because it symbolizes the efforts of a community of educators and students in Cape Coral, who went to great lengths to protect the habitat of the burrowing owl on their schoolyards in 1988.

Historically, Cape Coral was a large forested wetland. In the 1950s a corporation dredged and filled over 100 square miles for future development. This activity evicted other native wildlife but created a prairie-like habitat which was perfect for burrowing owls. The owls were quick to take advantage of it.

Unfortunately, life in Cape Coral became increasingly difficult for these ground-dwelling owls as development consumed the sandy, empty lots they needed for nesting sites. Cats, dogs, cars and careless people also took their toll on the pint-sized birds.

The situation in Cape Coral reflected the burrowing owl's predicament throughout the state. Burrowing owls formerly nested in Florida's drier prairies, but many of these areas were converted to pastures and citrus groves. As native prairies disappeared, developers were creating artificial ones in rapidly growing coastal areas. Thus, burrowing owls displaced by agriculture moved to these urban prairies, where the largest populations now occur.

Using information from studies conducted in Cape Coral by ornithologist Ted Wesemann from 1984 to 1986, Commission biologists selected Cape Coral as a burrowing owl study site in 1987. The primary goal was to monitor burrowing owl population trends over a designated area for five years. Twenty-six caring and competent volunteers of the Audubon Society of Southwest Florida contributed endless hours of their own time to carefully collect data on four to 12 nest sites each.

From the initial survey in 1987, it was evident that the citizens of Cape Coral valued their owls. A group of interested teachers formed the Burrowing Owl Education Committee. They then recruited teachers at Pelican Elementary School, which was located right in the middle of the study area and had four owl burrows of its own.

One particular fourth-grade class performed a play emphasizing the problems owls face, as well as actions that people could take to help the owl. The class used this event to launch the Owl Watchers League (OWL). It then became the duty of the members of OWL to protect burrowing owls for the benefit of all and to share this concern with friends and family.

According to Cindy Bear, a Lee County educator and chair of the Nongame Wildlife Advisory Council, the OWL program continues to operate and inspire students in Cape Coral. Three schools have active burrows on their property and are taking steps to protect them. Scattered populations also exist in native prairies, rangeland and developed areas where neighborhood lawns and school grounds have replaced the treeless grasslands and pastures once utilized by these ground-dwelling birds.

Your purchase of this limited, once-in-a-lifetime offer will enhance the Commission's ability to restore wildlife habitat and benefit a wide variety of Florida's wildlife – including the burrowing owl.

Each sculpture has a purchase price of $350. Forty percent of the purchase price will go directly into the Habitat Education Fund of the FPWAGP. Turner Sculpture will receive $210 to cover production and shipping costs and the grant fund will receive $140. Each piece sold includes a certificate of authenticity and a letter confirming your contribution to the FPWAGP.

To order your signed and numbered burrowing owl sculpture, send a check for $350 to: Turner Sculpture, Box 128, Onley, VA 23418. For credit orders call: (804) 787-2818.

Tim Roach is the Commission's state coordinator for Project WILD.

David Turner

FLORIDA WILDLIFE

1994 Cover Art Contest

Deadline for submission of slides: Monday, May 2, 1994

PRELIMINARY JUDGING: Send labeled 35mm color slides or larger transparencies of your artwork. Artists may submit up to three entries, and art should fill the entire frame of the slide if possible. Do not send slides of framed work. All slides will be returned after the winning art has been published in the July-August issue.

SUBJECT MATTER: Native Florida species from the following categories are suggested:

Nongame species such as turtles, salamanders, butterflies and birds such as songbirds, wading birds and raptors.

Game and furbearing species such as white-tailed deer, wild turkey, bobwhite quail, mourning dove, ducks, largemouth bass, otter, beaver, fox and bobcat.

Endangered species such as the Florida panther, red-cockaded woodpecker, Key deer and American crocodile.

SIZE AND COMPOSITION: Submissions should follow a horizontal 11 x 17-inch format (size of magazine unfolded) with the main subject placed on the right-hand half of the work. Remember, the FLORIDA WILDLIFE logo will be placed across the front cover, two inches from the top. The artist's signature should be well integrated with the painting or placed in the lower right-hand corner with ample space from the edge of the work.

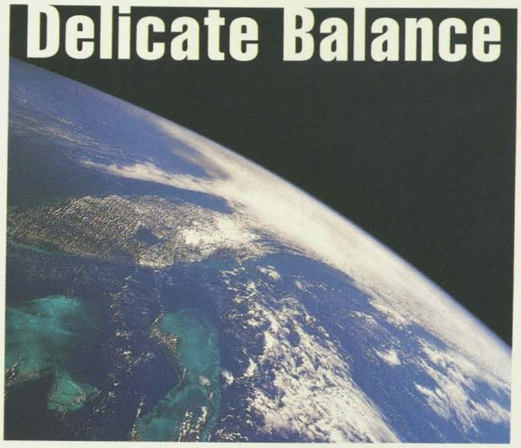
AGREEMENT TO PUBLISH: The winning artist's work will be displayed on the cover of FLORIDA WILDLIFE's July-August 1994 issue. The artist will be paid $500 for the cover and rights to publish 1,000 limited edition, numbered and signed prints. The agreement will specify delivery terms, vest ownership of the original with the artist and provide the Commission with future rights to feature the work for promotion. The artist will receive 25 prints. Honorable mention winners will receive a cash award.

JUDGING: Entries will be judged on originality, anatomical correctness, color, design, mastery of the medium chosen and appropriateness to the magazine's format.

SEND TO: Art Editor, FLORIDA WILDLIFE, 620 South Meridian St., Tallahassee, FL 32399-1600. Include your Social Security number, daytime phone number and a self-addressed, stamped envelope with your entries.

The magazine staff will provide reasonable care for slides received from artists but cannot be responsible for loss or damage. Artists should insure their slides if they feel it is necessary.

Delicate Balance



Willet (*Catoptrophours semipalmatus*)

As predictable as the tides on Florida beaches, the willet is a bird reliably spotted year-round on both coasts. As it probes and pokes in the tide line or in mudflats and salt marshes for marine worms, small crabs and insects, its constant presence offers a refreshing contrast to the acute declines that have become apparent in many other shorebird species.

While the willet's dependability may be a comfort to some, it seems that familiarity has bred contempt among ornithologists. Descriptions of the bird in the literature rely on unflattering adjectives such as "rather odd," "strident voice," "heavy and inelegant," "drab" and "nondescript." Although somewhat maligned, the willet is so distinct, in fact, that it is placed in its own genus, Catoptrophorus.

When feeding in mixed flocks, the willet's height of 14-16 inches is almost twice that of most of its neighbors: dunlins, plovers, sanderlings and other shorebirds. The strong blue-gray legs, robust body and rather long, heavy bill distinguish it from the greater yellowlegs with which it is sometimes confused. A bold black-and-white, w-shaped pattern on the wings, and a gray-tipped white tail, are visible when the willet is in flight. Its voice is a loud, shrill pill-will-willet, from which it derives its common name.

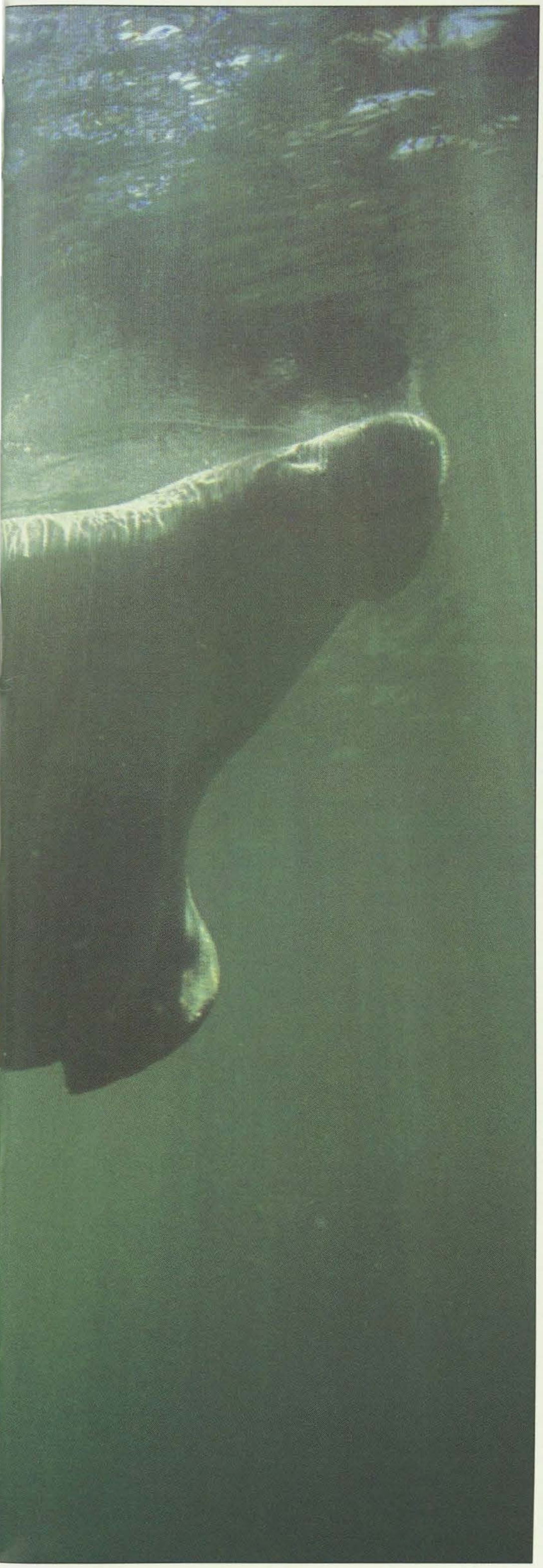
While beaches are popular sites for feeding and loafing willets, salt marshes provide nesting areas and a ready source of food for developing young. A typical nest is a simple construction of grass, bent down to form a floor. The female lays three to four eggs in the concealed nest and shares incubation duties with the male. Like most ground nesters, the willet's eggs are vulnerable to predation by raccoons, snakes and otters. Eggs hatch within 22-29 days; the gray or buff colored chicks leave the nest within a few hours of hatching and begin searching the marshes and mudflats for food, a task apparently accomplished with little parental help.

There are two subspecies of willets found in North America, sometimes referred to as western and eastern willets. The eastern subspecies breeds from southwestern Nova Scotia, south along the Atlantic Coast to Florida and the West Indies and as far west as southern Texas. In the winter, the population shifts southward and may be found from Virginia to Central and South America. Florida's mild climate and abundant coastal habitat support year-round populations, with the numbers peaking in the winter when willets from northern coasts join residents. A recent analysis of Christmas Bird Count data indicates that willets are more concentrated along Florida's west coast, particularly the highly urbanized areas between Tampa and Naples.

While overall population trends seem to indicate that Florida's willet population is stable, biologists stress the need for more information and caution against complacency. The willet is under many of the same pressures facing other shorebirds: human disturbances along beaches, loss of habitat and threats from pollution. Strong coastal conservation efforts will ensure that the willet continues to be a reliable presence on Florida's beaches.

–Ann Morrow

LYNN M. STONE



Responsible Manatee Viewing

By Susan Cerulean
Photographs by James Valentine

Imagine coming home on a dark, winter's night after a long trip out of town. You're chilled to the bone, and all you want to do is grab hot soup and curl up in bed. But as you walk in the door, surprise! Several dozen close friends and well-wishers are there to greet you. You've been gone for months, and you've been missed. Someone offers you food and hugs, another, a stiff drink – they're ready to party! After a while, you just want to be left alone.

Scientists generally frown on anthropomorphism – projecting our human experiences, thoughts and emotions on wild animals – but the scenario above just might represent life for endangered Florida manatees these days. Over-friendly humans are literally crowding these animals out of their winter sanctuaries.

During the summer months, the state's vulnerable population of 1,200 manatees moves freely about shallow, slow-moving rivers and coastal bays around the state, seeking quiet shelter and aquatic plants to eat. But from November through March, the nearly hairless mammals conserve body heat by swimming into the warmest waters they can find, including natural springs, spring-fed rivers and warm-water effluents of power plants.

In these traditional refuges, manatees are greeted by hundreds of thousands of eager boaters and divers, all hoping to swim with, photograph, or at least see, a manatee. Inevitably, some of the defenseless mammals are harassed or separated from their young. The U.S. Fish and Wildlife Service acknowledges that the concurrent use of the main spring area at Crystal River by divers and manatees during cold weather creates a problem for manatees.

Manatees are shy, harmless creatures that are easily driven away from the warm springs by human activity, says their 1993 draft management plan for the Crystal River National Wildlife Refuge. On days when surrounding water temperatures are below 68 degrees, manatees may begin to show signs of cold-water stress, like reduced metabolic rate and cessation of feeding. If the cold stress continues long enough, manatees will die. And perhaps most threatening of all, the growing number of swift, propeller-driven water craft in manatee refuges has increased the number of manatee/boat collisions, many fatal to the slow-moving beasts.

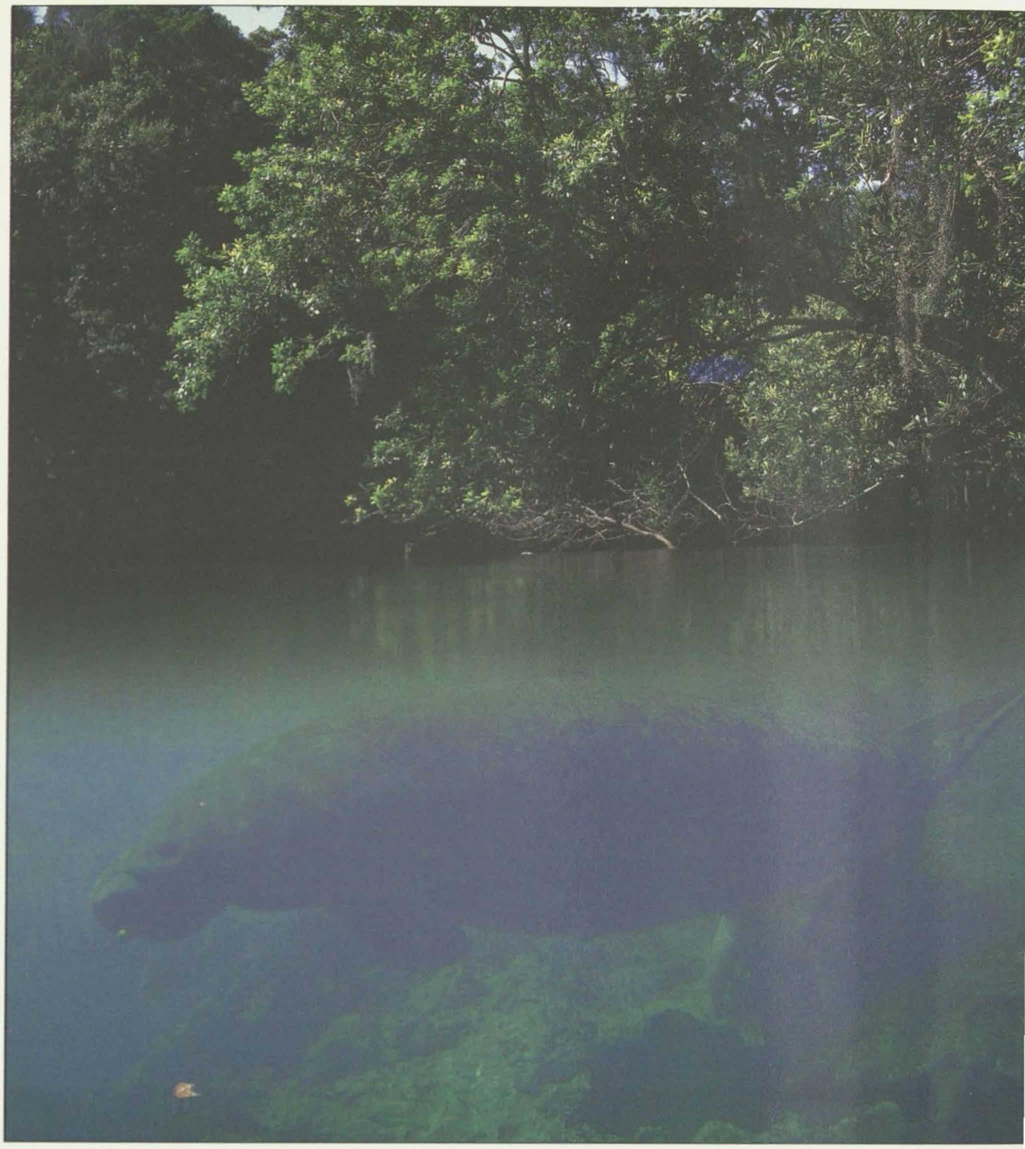
At the Crystal River refuge, where several hundred manatees find winter sanctuary, managers are struggling to ensure that public use is compatible with manatee protection.

"It's difficult," admits law enforcement specialist Jay Pilgrim. "Last year, between October and April, we wrote 63 tickets for speeding and manatee sanctuary violations. And for each ticket we wrote, we issued at least 100 warnings." This high level of disturbance occurs despite the fact that most people visit with completely benign intentions. They simply want to get ▷

close to the fascinating animals, and many have traveled a long way and spent a lot of money to do so.

"We're encouraging passive manatee observation this year," says biologist Patti Thompson of the nonprofit, Orlando-based, Save the Manatee Club. "We are urging folks to stay out of the water and observe the animals from the shoreline. That way, unintentional harassment just won't happen. The other reason we feel people should stay out of the water and keep their distance from manatees is that the animals become used to human presence. Unfortunately, your good intentions may not be shared by the next visitor." Save the Manatee Club, in fact, recently offered a $1,500 reward for information leading to the arrest of a person or persons who allegedly roped a manatee and forced the animal to pull a boatload of people around the Homosassa River near Homosassa Springs, Florida.

Two Florida state parks and one private facility offer thrilling opportunities to observe manatees in their natural habitats, without disturbing the animals. More than 60 manatees winter regularly at Blue Spring State Park, 25 miles north of Orlando. On chilly days from November through March, they gather in the crystal-clear spring run. The boardwalk beside Blue Spring Run, surrounded by magnificent subtropical hardwood hammock, is a superb place to view them.



In addition, wading birds, alligators, river otters and large fish often are spotted in the spring run, lagoon and river mouth. Bald eagles circle the park during winter and spring, and nesting swallow-tailed kites are often seen in early summer. A fine stand of sand pine scrub, hardwood hammocks dominated by moss-draped live oaks and magnolias, and seasonally-flooded river swamp add to the park's diversity, and all are accessible by foot trail. From mid-November to mid-April the park offers excellent slide programs on manatees.

North of Tampa lies Homosassa Springs State Wildlife Park, a large, natural spring that provides refuge for captive-born and rehabilitating manatees awaiting release back into the wild. Visitors can walk into a large, floating underwater observatory in the main spring, separated from the animals only by a thick pane of glass. As many as 34 species of freshwater and saltwater fish are also attracted to the comfortable and constant 72-degree water of this 45-foot deep spring. The spring pumps millions of gallons of water every hour into the Homosassa River, which flows nine miles west into the Gulf of Mexico.

A wide variety of Florida water birds, including wood ducks, egrets, herons and white ibises, reside in the park or migrate through it. Captive animal exhibits focus on native species in semi-natural habitats, including alligators, black bear, bobcat, river otter, white-tailed deer and waterfowl. Nesting osprey, great blue herons, wood ducks and sunning turtles are often spotted along the park's waterways. Alligators, crocodiles, manatees and other native wildlife are the subjects of frequent ranger-led programs, and a new children's education center features hands-on exhibits.

At the Big Bend Manatee Viewing Center near Ruskin, manatees seek winter refuge in the warm-water discharge canal of Tampa Electric Company's generating plant on Tampa

Bay. As many as 120 of these aquatic mammals have been spotted at one time in the canal during very cold weather. The site was designated as a State Manatee Sanctuary in 1986. A new environmental education building has exhibits on the manatee and its habitat. A platform over the shallow canal provides excellent views of manatees and large fish such as tarpon, catfish, snook and mullet. Another boardwalk passes through mangroves alongside the canal. This site is only open December through March from 10:00 a.m.-5:30 p.m., Wednesday through Saturday, and 1:00 p.m.-5:30 p.m. on Sundays.

Manatees don't need our food, our touch or our companionship. They'll find the space, warmth and food they need in Florida's waters, as they have done for generations, if only we'll get out of the way.

HOW TO GET THERE

Blue Spring State Park

Directions: From U.S. 17/92 in Orange City, drive 2.5 miles west on French Avenue to park entrance.
Facilities: Restrooms, parking, camping, picnic areas, handi-cap accessibility, boat ramp nearby.
For further information: Blue Spring State Park, 2100 West French Avenue, Orange City, FL 32763. Telephone: (904) 775-3663

Homosassa Springs State Wildlife Park

Directions: Main park entrance located on U.S. 19 in Homosassa Springs. Follow the signs.
Facilities: Parking, restrooms, picnic grounds, hiking, restaurant, handicap accessibility.
For further information: Homosassa Springs State Wildlife Park, 9225 West Fishbowl Drive, Homosassa, FL 34446. Telephone: (904) 628-2311

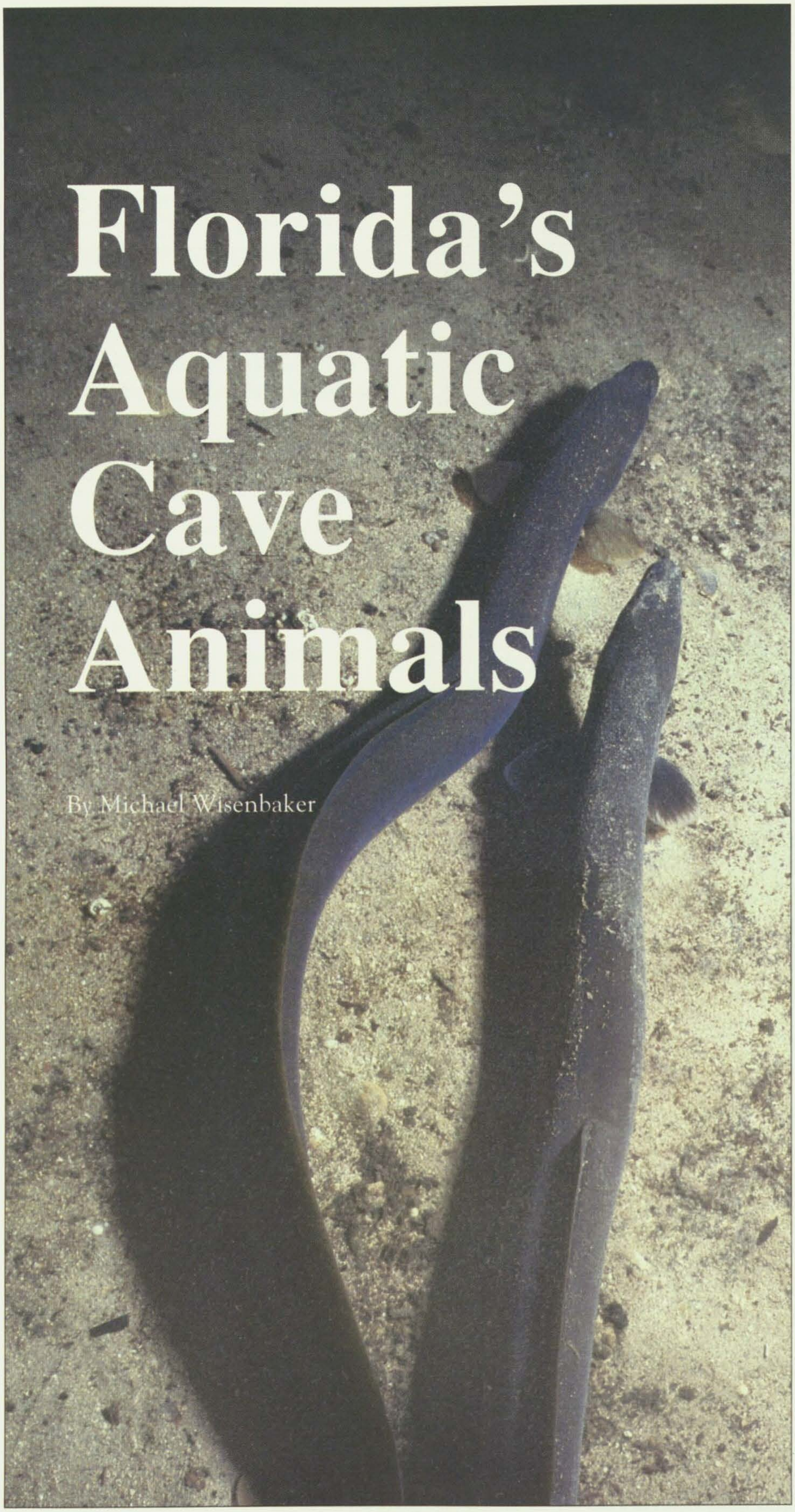
Big Bend Manatee Viewing Center

Directions: Take I-75 to Apollo Beach (exit 37). Turn west on Big Bend Road. Go through the traffic light at U.S. 41 to the entrance at the corner of Dickman and Big Bend roads.
Facilities: Parking, restrooms, handi-cap accessibility.
For further information: Tampa Electric Company (813) 228-4289

Susan Cerulean is a biologist and free-lance writer, co-author of the new FLORIDA WILDLIFE VIEWING GUIDE.

Florida's Aquatic Cave Animals

By Michael Wisenbaker



American eels in caves at Merritt's Mill Pond near Marianna.

WES SKILES

Florida lies over a limestone basement riddled with water-filled cavities. Because voids in the rocks range from minuscule cracks to rooms that could swallow cathedrals, some springs and sinkholes in the state offer glimpses into a world of endless night.

Since no green plants exist beyond twilight zones, areas where natural light from the surface enables human vision, you might expect aquatic caves to be biological deserts. Yet sporadic floods prevent these from being lifeless. While green plants can't survive, bacteria and fungi flourish if organic matter from the surface – like wood, humus, feces and carrion – reaches the underworld by way of sinks and swallow holes. This is eaten by protozoans and rotifers, which in turn supply meals up the food chain.

A few amazing aquatic creatures, little known to humans, thrive in Florida's caves. Biologists place cave animals into three distinct groups known as trogloxenes, troglophiles and troglobites.

Most of us immediately associate trogloxenes – or cave visitors – with caves. Bats and the extinct cave bear usually come to mind first. The underwater denizens of the trogloxene

Red-eyed cave crayfish

group include some salamanders, many crayfishes and cave divers. Pirate perch, sunfishes and minnows also haunt the twilight zones. While these guests may spend much time in dark grottos, none spend an entire life there. They must return to the surface to feed, breed or breathe.

Troglophiles – or cave lovers – can reside either in or out of aquatic caves. Nothing limits them to life underground. Although no true cave fishes exist in Florida, the yellow bullhead (or yellow catfish), American eel, and redeye or spring chub are troglophiles that inhabit the state's underwater caves. During the 1987 Wakulla Springs Project, divers saw all three fishes as far back as 3,500 feet and as deep as 300 feet. After having dived in Florida springs and sinks for more than 20 years, I have found catfish and eels to be the most common cavern occupants.

The yellow bullhead probes far underground, feeding on mud, rotting leaves, pieces of limestone, springtails (tiny, wingless insects) and crayfishes. Reaching just over a foot long, with a squat body and square tail, they often develop abnormalities such as reduced or deformed fins. Of the three troglophiles noted here, yellow bullheads might be the best suited for subterranean life because of their small eyes and elaborate chemosensory systems.

The American eel, however, may be the most intriguing. They live in fresh water, but must return to the Sargasso Sea in the North Atlantic to spawn. Eels could be classed as trogloxenes since they don't breed in caves. The females, however, stay in fresh water from seven to 20 years before returning to the ocean. These snake-like fishes range in length from 1-4 feet. Though larval insects comprise about 90 percent of their diet, a cave diver in central Florida claimed that an eel nipped his finger while he decompressed.

Redeye chubs, too, make their way into isolated sinkholes and caves far from surface openings. Also common in and near spring vents, these diminutive fishes rarely grow longer than 2 inches. They eat insects, crustaceans and smaller fishes.

Troglobites – cave life – comprise the final group of cave animals. The eminent French speleologist Norbert Casteret dubbed them "pariahs of creation." Although "trogs" may be flushed accidentally out of caves by local downpours, they are true cave dwellers that cannot survive on the surface.

Many troglobites share traits that allow them to search for food and mates in the seasonless reaches of caves. Their eyes are either poorly developed or nonexistent, with little or no pigment – often appearing sickly white. Cave animals do not need to see, to be camouflaged or protected from the sun. They usually grow longer, slimmer antennas and other parts than surface fauna so that they can better detect enemies or seek prey through odors, chemical changes and movements. Their antennae may even hold special hair-like growths that serve as feelers.

Troglobites live much longer than their topside counterparts because of lower food intake and a slower pace of life. They excel in conserving energy. Some retain larval traits well into adulthood. Troglobites also lay fewer and larger eggs than their outside kin, another probable adaptation to a limited and erratic food supply.

In 1961, only 10 species of aquatic troglobites were known in Florida. According to the Florida Natural Areas Inventory, 24 species are now known in the state. Three are listed as threatened or species of special ▷

TOM MORRIS

MICHAEL WISENBAKER

A yellow bullhead catfish, a troglophile, rests in Osgood Sink near Woodville.

concern, one federally. Crustaceans make up most of this group. They include blind cave crayfishes (three genera and 15 species), a cave shrimp, isopods (two genera and four species) and amphipods (two species). A salamander and cave snail comprise the rest of the troglobitic clan. Most of these animals exist in a few sites in Florida and nowhere else. Each year explorers venture into virgin passages, leading to the discovery of new species.

Blind cave crayfishes are the troglobites most often recognized by Florida divers. They have seen them as far back as 4,220 feet from the cave mouth and at depths of 310 feet in Wakulla Springs, south of Tallahassee. Noted for their long pincers, the crayfish resemble dwarf Maine lobsters. Horton Hobbs, a Smithsonian Institution biologist who studies them, believes they probably originated from surface ancestors more than a million years ago.

With 15 known species, the blind cave crayfishes account for over half of Florida's aquatic troglobites. Crayfishes seem much more prevalent near sinkhole openings, where food periodically washes in, as opposed to spring outputs. Flatworms, salamanders, amphipods, isopods and copepods make up their diet.

One aquatic troglobite, a cave shrimp, exists only in Squirrel Chimney, a sinkhole 11 miles west of Gainesville. Almost colorless and translucent, it grows to about 1.5 inches. According to Richard Franz, a biologist with the Florida Museum of Natural History in Gainesville, "We know nothing about this animal. We know nothing about its distribution. We know nothing about its biology. The only thing we know is it occurs at Squirrel Chimney." We also know that other varieties of cave shrimp living farther north feed on the bottom, screening silt that harbors protozoans and other microbes through their mouths.

MICHAEL WISENBAKER

Big Dismal Sink in the Apalachicola National Forest holds more than 12,000 feet of mapped passages.

Cave amphipods form an order of vertically flattened creatures shaped liked giant fleas. They range from 3/16 to 7/16 inches long. These small crustaceans have long legs, some of which point backward and flex against the body. They either swim in the water column or crawl around on the bottom. Amphipods can walk, jump, swim and scull about on one side. Sometimes they scoot through the water by arching their backs. They eat protozoans, rotifers, bacteria and other organic matter in the silt. After many years of diving, I saw my first cave amphipod in a sink near Woodville.

Cave isopods, tiny crustaceans less than 1/4 inch long, are related to the roly-poly or sow bugs that live under logs in terrestrial habitats. They look somewhat like leveled rowboats. Isopods prefer the safety of ceilings and floors as opposed to teasing predators in the water column. Cave divers often call them snowball or kamikaze shrimp because of their sudden free falls. They eat the same foods as amphipods.

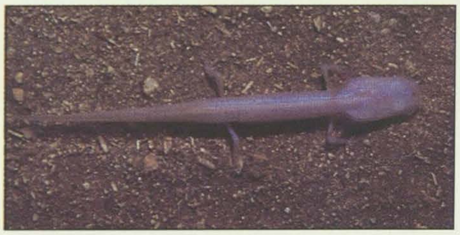
Blue Springs Cave near Econfina Creek in the Panhandle holds the state's only known cave snails. This cave wends through a series of small rooms and tunnels. The snails there feed on wood brought into the labyrinth by beavers. Like most other troglobites, they are colorless and lack eyes. The snails bear the name of Richard Franz, who discovered them while searching for cave fauna in Florida.

The Georgia blind salamander, the only vertebrate troglobite in Florida, inhabits several caves near Marianna and in nearby southwest Georgia. The small amphibian grows to 3 inches in length. First described by Dr. Archie Carr in 1939, its sunken head houses minute dark eye-spots buried under the skin. The creature propels itself with a laterally flattened tail shaped like a

TOM MORRIS

A cave diver in Luraville II Spring in Suwannee County enters a passage where the floor is pocked with catfish bites. (below) A Georgia blind salamander, the only troglobite with a backbone, sits on the floor of the cave at Jackson Blue Springs near Marianna.

fin. In partially submerged grottos, the salamander sometimes climbs out of the water. It feeds on troglobitic crustaceans and in turn becomes food for blind cave crayfishes, eels and other salamanders.



WES SKILES

Why be concerned with a few tiny blind animals that most people will never see?

For starters, the state's many sinkholes and chimneys, some of which have been open a million years or more, have allowed animals to reach underground sanctuaries. Many scientists think that caves served as warm refuges for ancestors of troglobites during the dramatic climatic shifts of the Pleistocene or Ice Age (2,000,000 to 10,000 years ago). Thus, troglobites inhabiting these isolated, simple niches furnish us with natural labs in which to study evolution.

The specialized fauna living in underwater caves also can be used to gauge the environmental health of the state's massive limestone aquifers. These aquifers hold about 90 percent of our potable water. Waste and storm water runoff, as well as agricultural and industrial contaminants, may seep into sponge-like rocks that house the aquifers. Unfortunately, tainted water does not magically cleanse itself after vanishing beneath the earth and sometimes shows up unexpectedly in springs or wells. In some areas, water travels over a half mile underground in one day. Even slight changes in temperature, water quality or nutrient levels can annihilate the small populations of fragile creatures living in our aquifers. If the troglobites go, so may our water supply.

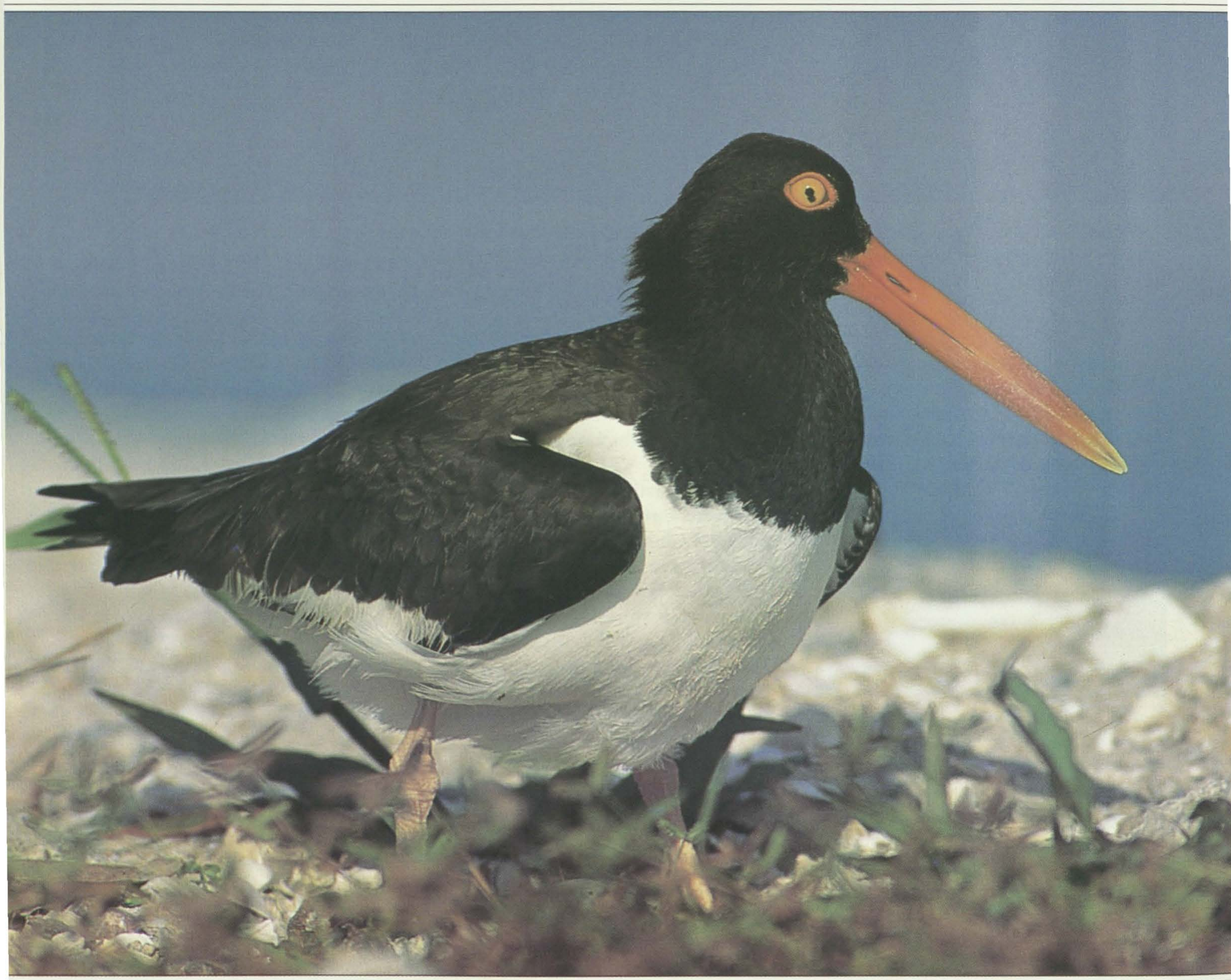
After a recent dive in a sinkhole called Falcon's Nest in southeastern Leon County, I even began to wonder if divers might unknowingly be harming creatures living in our aquifers. As my buddy and I slid down through a small slot and entered a gigantic room, trogs began raining from the ceiling. Did our bubbles cause undue stress on the animals' limited reserves by prying them from the roof? I've also noticed that well-known dive sites seem to have fewer troglobites than more remote places.

Much work needs to be done to learn more about aquatic cave communities and how humans are affecting them. Unfortunately, troglobites usually get little, if any, mention in the popular press. It is unlikely they will ever grace license plates that would fund studies to conserve them. Still, these inconspicuous creatures must be accounted for if we are to protect our groundwater – one of Florida's most vital natural resources.

Michael Wisenbaker is a part-time writer and veteran scuba diver.

Florida Wildlife Photo Contest

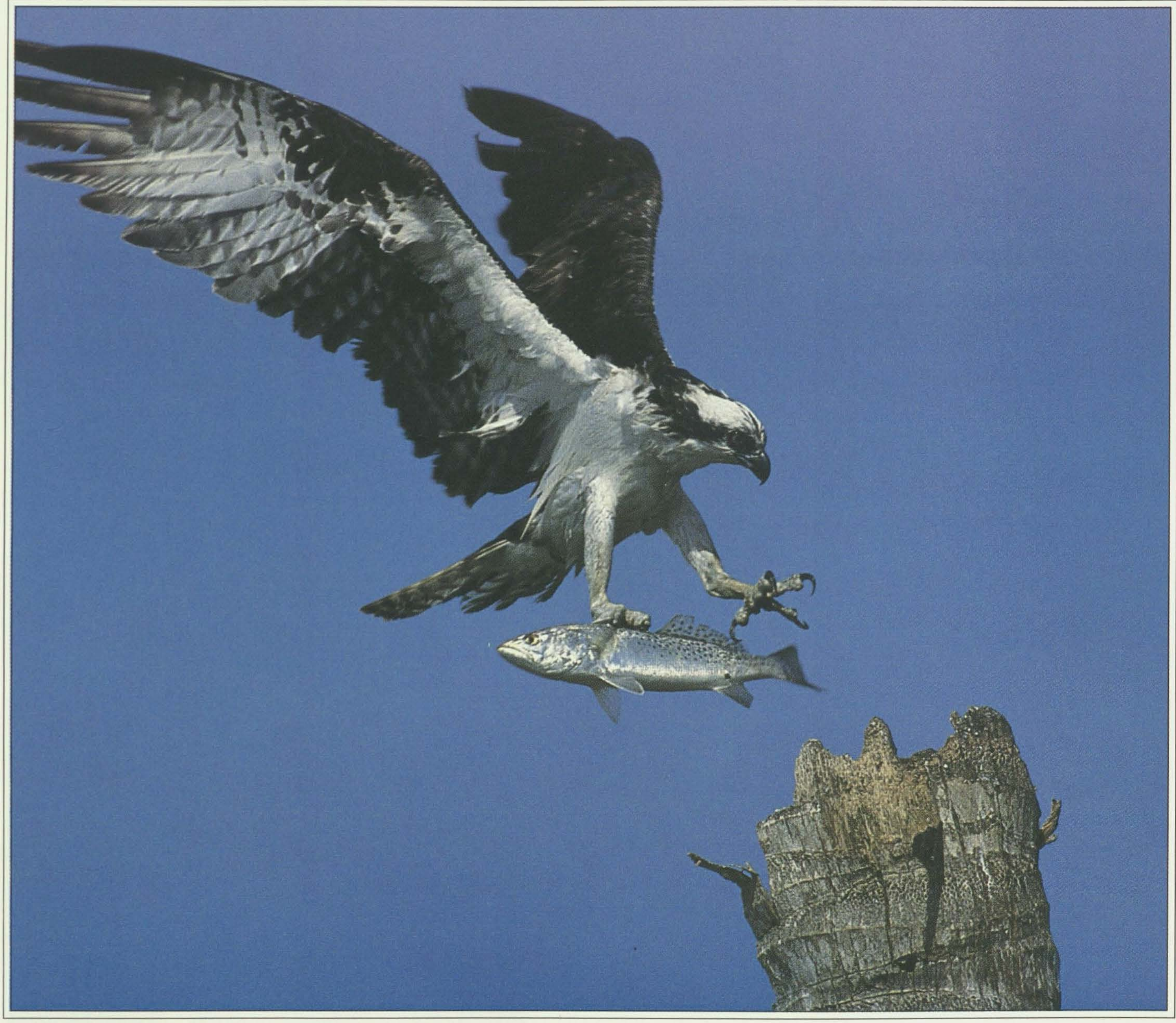
Wild Birds



FIRST PLACE: *OYSTERCATCHER by David Meardon*

Florida Wildlife Photo Contest

Wild Birds



SECOND PLACE: *OSPREY by John Flower*

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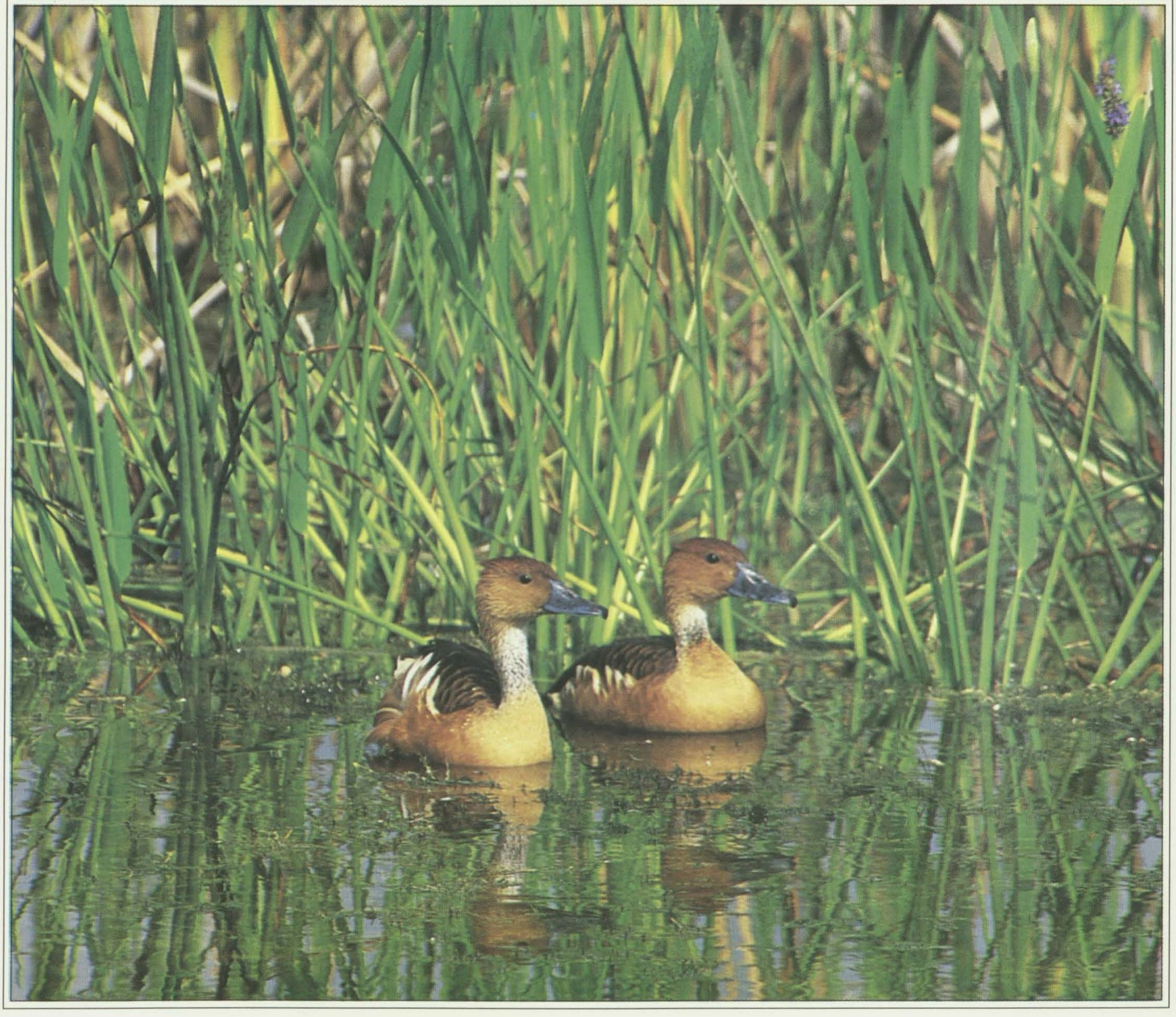
Florida Wildlife Photo Contest

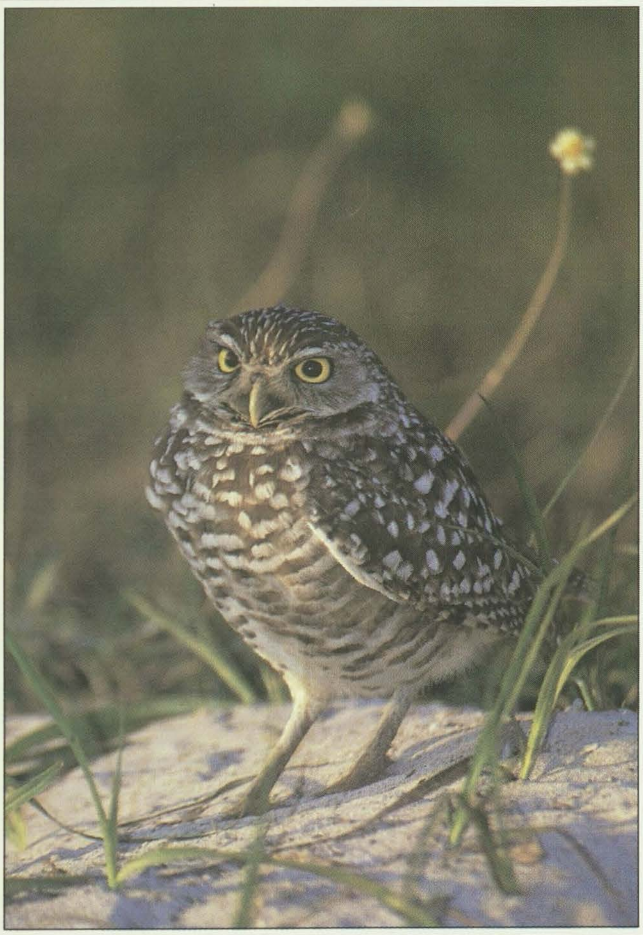
Wild Birds



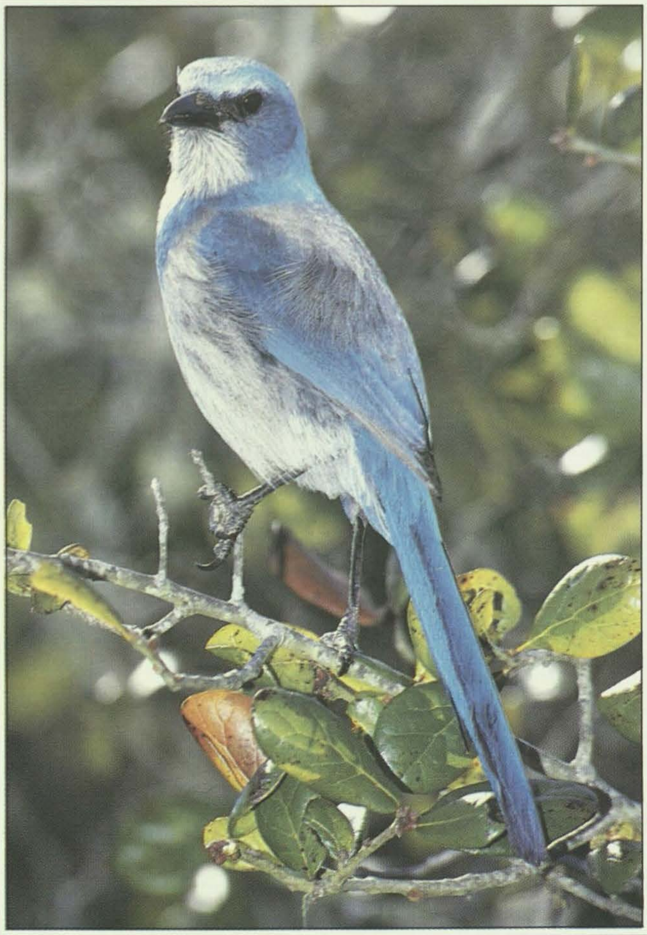
THIRD PLACE: *FULVOUS WHISTLING DUCKS by Chica Stracener*

Florida Wildlife Photo Contest

Wild Birds



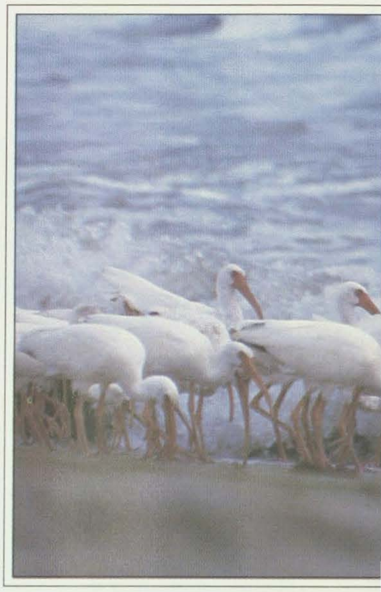
HONORABLE MENTION: BURROWING OWL by Lemoyne Johnson



HONORABLE MENTION: SCRUB JAY by Lemoyne Johnson ▷

Florida Wildlife Photo Contest

Wild Birds

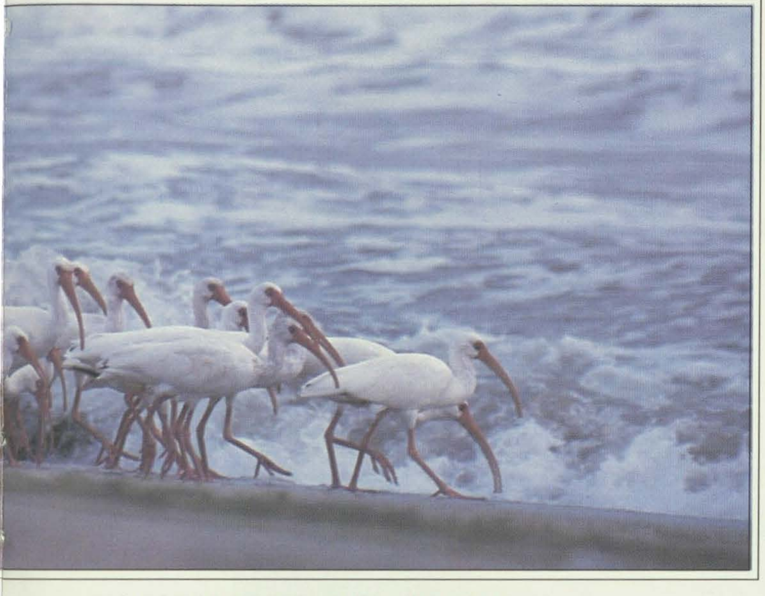


HONORABLE MENTION*: WOOD STORK by Billy B. Boothe Jr.*

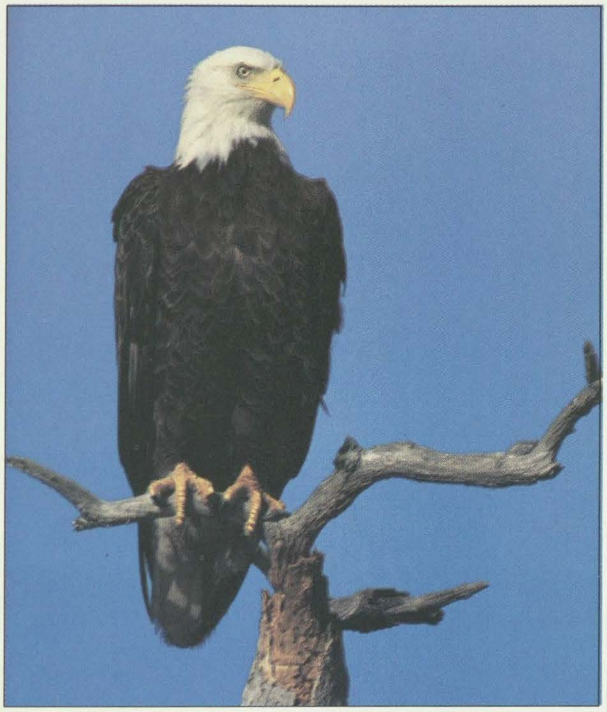
HONORABLE MENTION*: ROSEATE SPOONBILLS by Thomas Thomas*

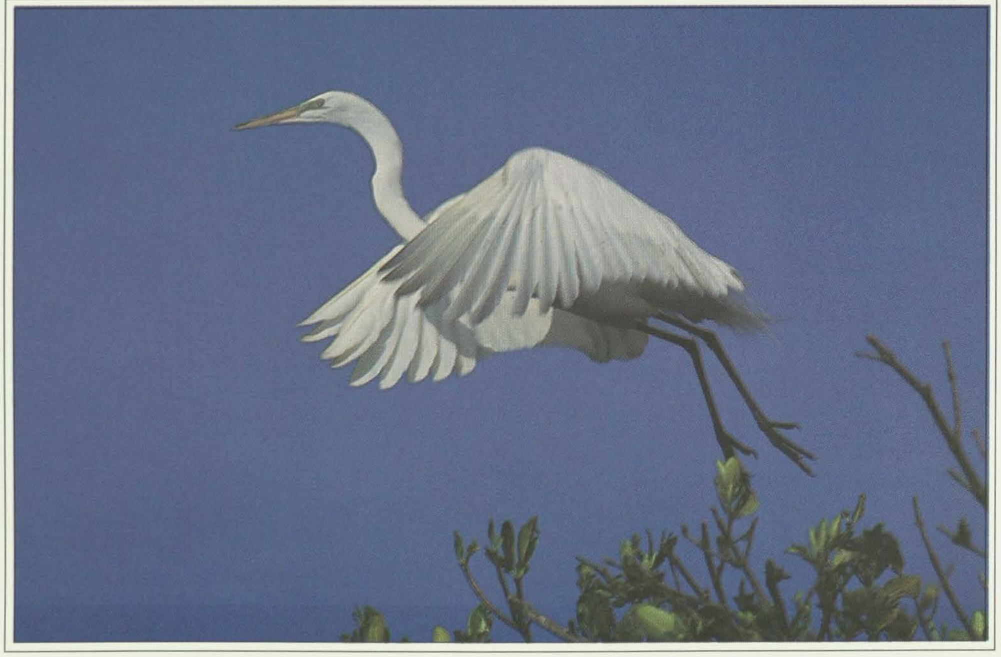
Florida Wildlife Photo Contest

Wild Birds



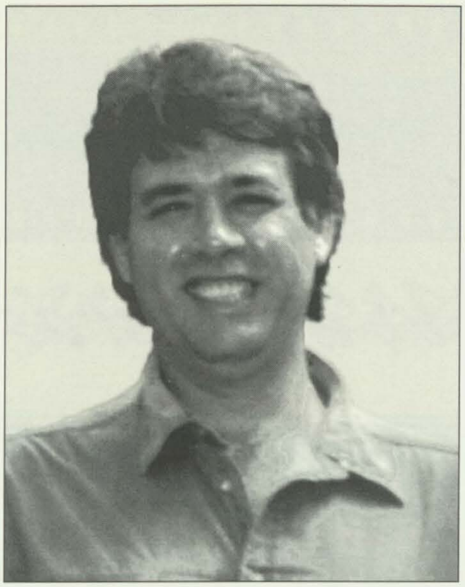
***HONORABLE MENTION**: WHITE IBIS*
by J. Michele LeFevre





***HONORABLE MENTION**: (Top Right)*
BALD EAGLE by John Flower

***HONORABLE MENTION**: (Right)*
GREAT EGRET by John Flower



CLARK FRAZIER

Tribute to an Artist

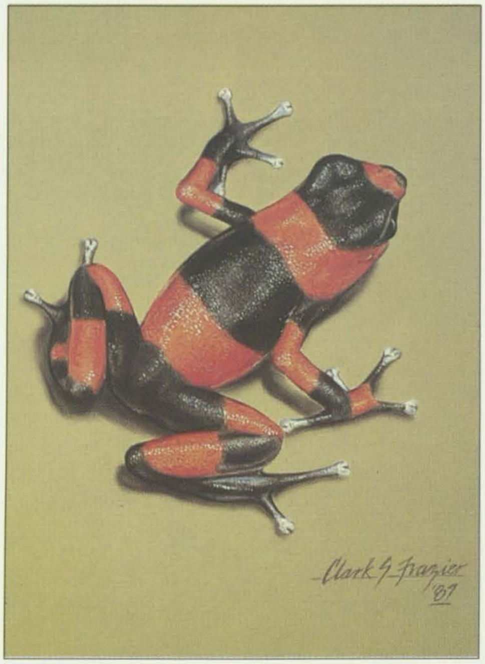
July 24, 1952 – October 8, 1993

Clark Frazier was art director with the Game and Fresh Water Fish Commission's Nongame Education section for five years. He was an extremely talented artist who expressed the natural world in a distinctive realistic style.

Clark designed and illustrated *The Skimmer* newsletter and the outstanding "Wild Florida" series. His work was used by the National Audubon Society and the Smithsonian Institution, among others, in educational pieces.

His last major assignment before his untimely death was to coordinate the artistic components of the Commission's 50th anniversary wildlife conference, including the exhibition area.

Clark loved nature. His fascination for wildlife took him on travels throughout Florida and the western states, and on to Mexico, Central America and South America. Wherever he went, he sketched and photographed native flora and fauna, which he brought to life with Prismacolor pencils or acrylic paints. His realistic wildlife illustrations helped him focus artistic energy on national and worldwide conservation efforts.

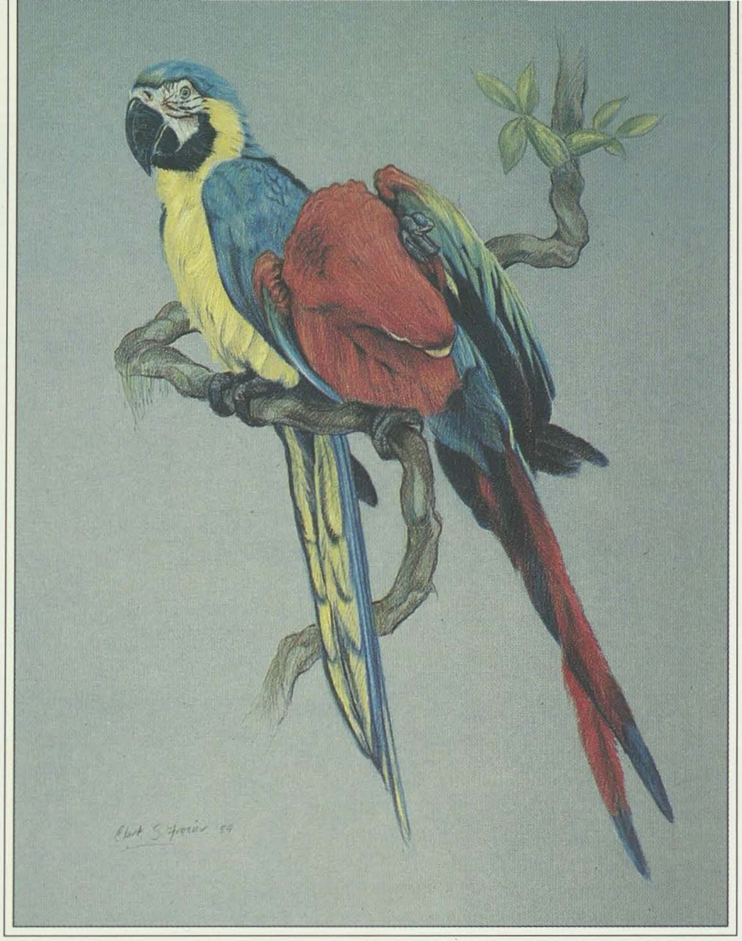


POISON ARROW FROG by Clark Frazier

Clark's dream of working with other international wildlife artists was becoming a reality. One recent project of his was a video documentary of travels in the Amazon with noted wildlife artist Richard Sloan. In addition, he and Jim Valentine, renowned nature photographer, were organizing a "Rainforest and the Artist" conference set for this spring.

Just as Clark's travels and experiences inspired his illustrations, we are inspired by the beautiful wildlife art that he created. Clark's caring commitment to our natural environment lives on through his work.

C. FRAZIER '86



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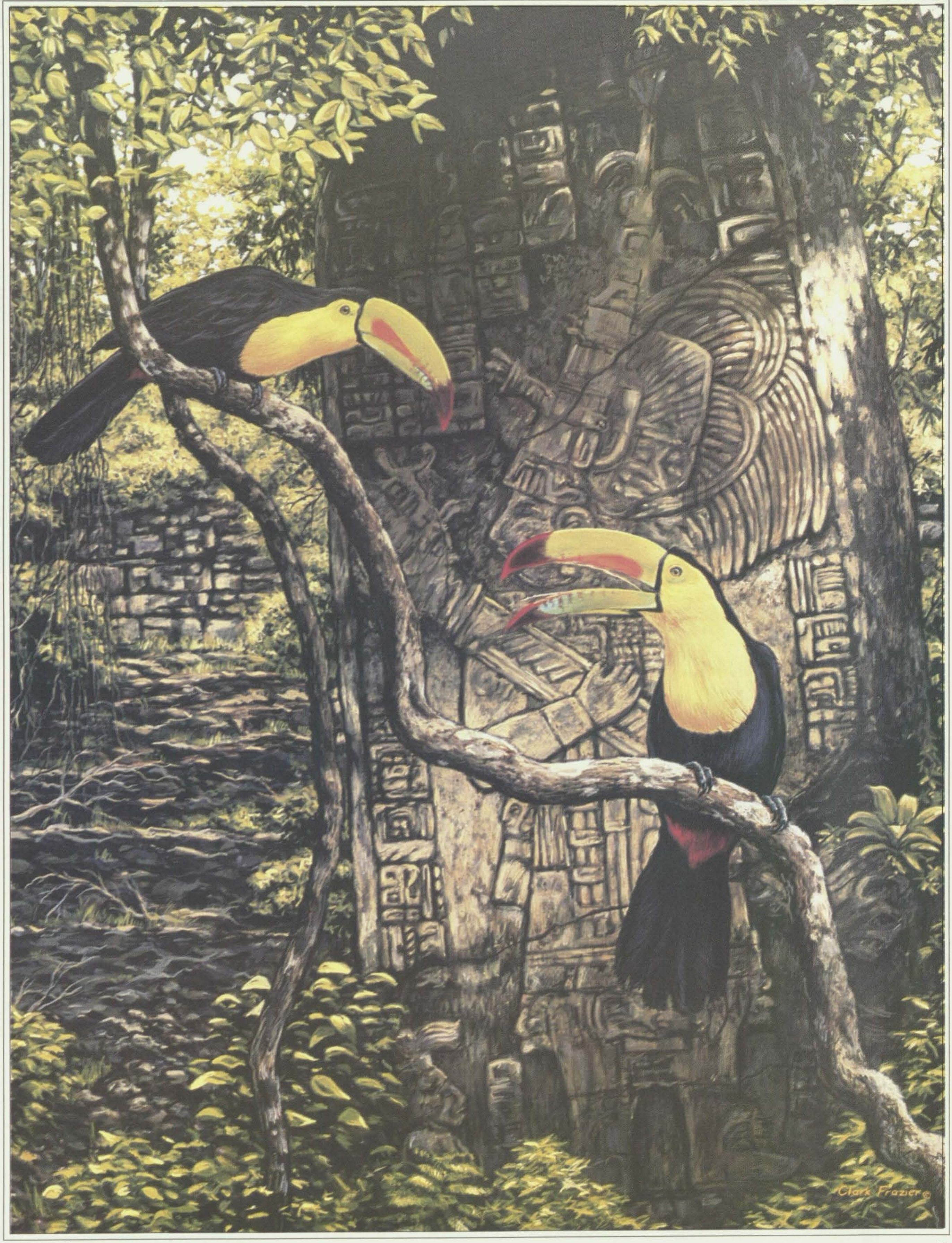
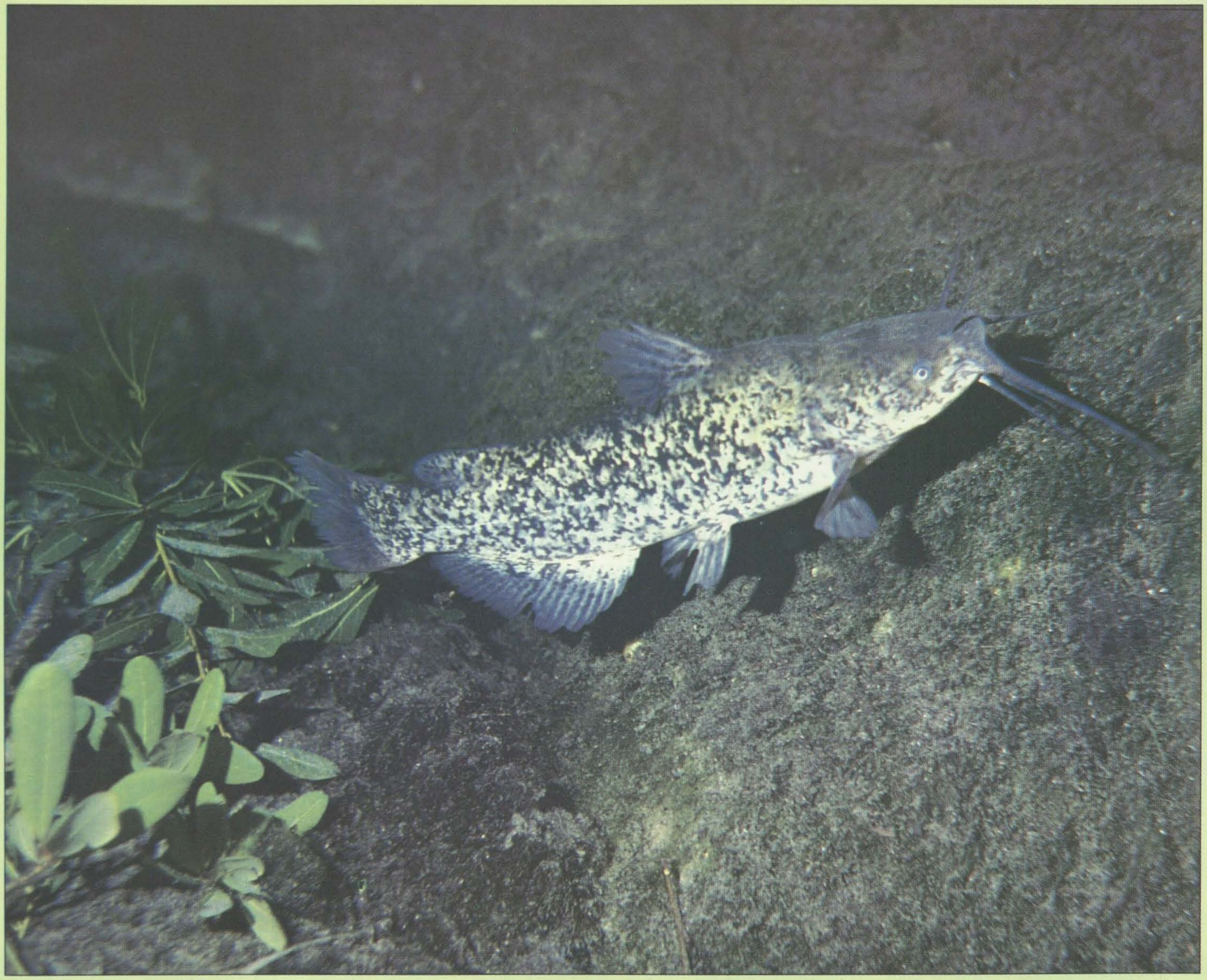


KEEL-BILLED TOUCANS AT MAYAN STELE by Clark Frazier.

Fourth of a Series

FLORIDA'S CATFISHES

By Mark A. Trainor
Illustrated by Duane Raver Jr.
Photographs by Doug Stamm



This fourth installment on Florida's freshwater fishes highlights catfish, one of the more important families of freshwater fishes found in the state.

Catfish are popular among Florida's anglers. In fact, only bass and panfish have larger followings of freshwater anglers. Considering the abundance and table qualities of catfish, it's easy to understand why this is so.

Members of the catfish family (Ictaluridae) of greatest interest to Florida anglers include four species of catfish – channel, white, flathead and blue – and two species of bullheads – brown and yellow. The channel and blue catfishes are members of the genus Ictalurus. The white catfish and yellow and brown bullheads belong to the genus Ameiurus, and the flathead catfish is the sole member of the genus Pylodictis.

Catfish are easy to recognize. They have four pairs of barbels or "whiskers" around the mouth, no scales, an adipose fin (a fatty fin on the back without spines or rays), and sharp spines on the dorsal and pectoral fins. White, channel and blue catfish have forked tails, while yellow and brown bullheads and flathead catfish have square or rounded tails.

Like sunfish, most catfish are nest builders. Depending on the species, one or both parents guard the nest and protect the fry for three to seven days after they hatch. In addition, most catfish are omnivores, meaning that they will eat both plant and animal food.

CHANNEL CATFISH

Common Names - spotted cat, blue channel cat, river catfish

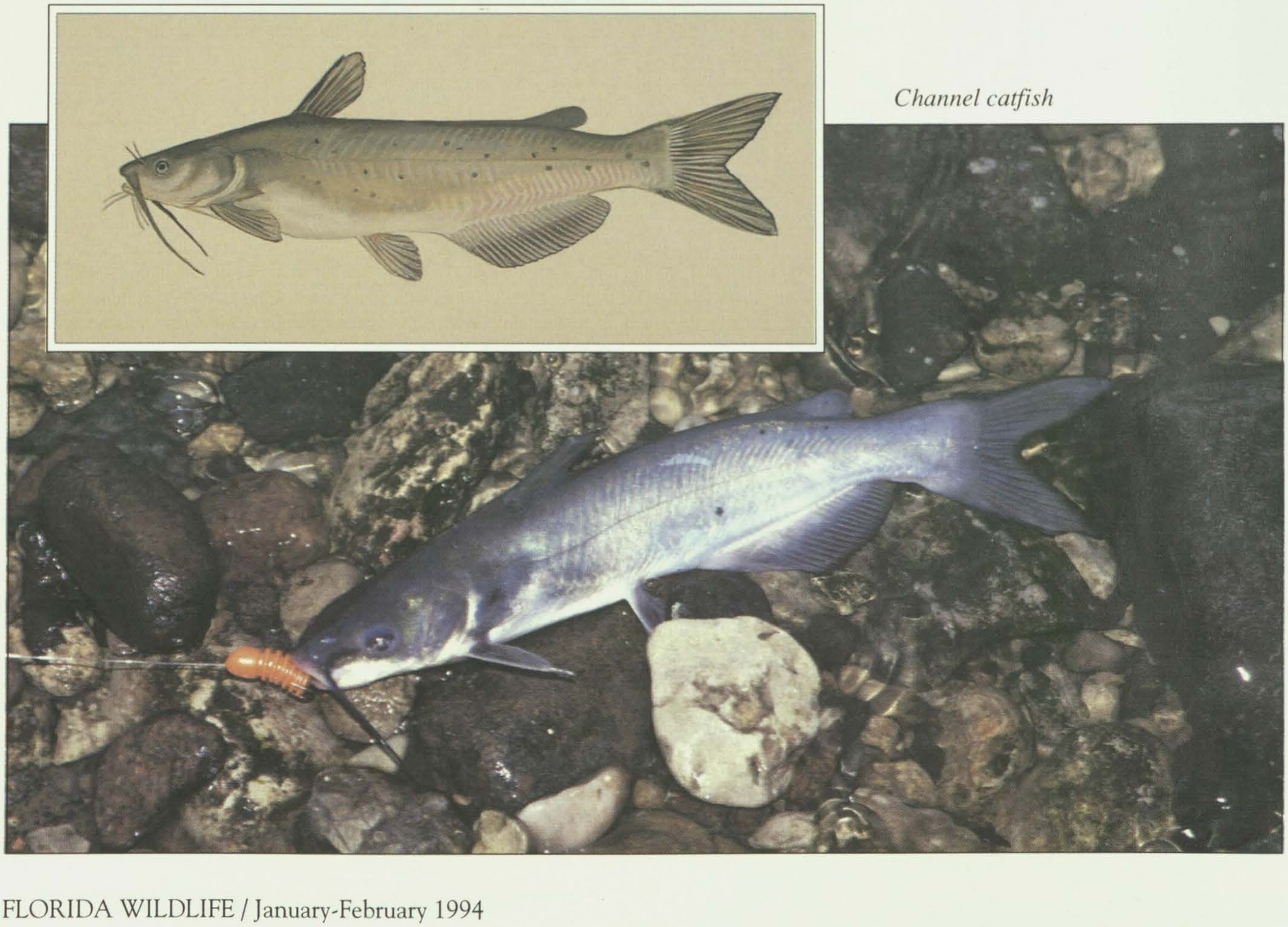
Description - Channel catfish closely resemble blue catfish. Both have deeply forked tails. However, channels have a rounded anal fin with 24-29 rays and scattered black spots along their back and sides. They have a small, narrow head. The back is blue-gray with light blue to silvery-gray sides and a white belly. Larger channels lose the black spots and also take on a blue-black coloration on the back which shades to white on the belly. Males also become very dark during spawning season and develop a thickened pad on their head.

Subspecies - There are no recognized subspecies. However, on rare occasions, they hybridize with blue and flathead catfish. Aquaculturists recognize numerous hatchery stocks and create a variety of hybrids to improve their culture characteristics.

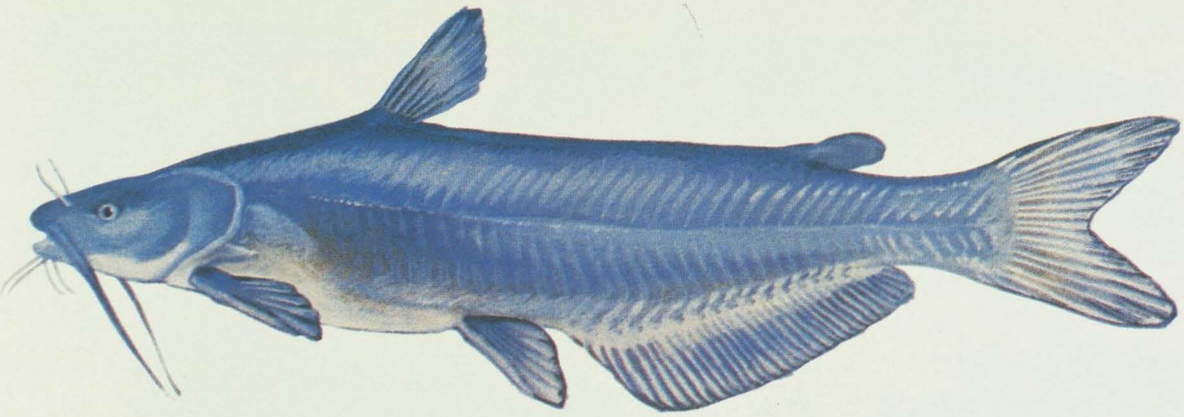
Range - Found throughout the state, except in the Florida Keys.

Habitat - Most common in big rivers and streams. Prefers some current, and deep water with sand, gravel or rubble bottoms. Channel catfish also inhabit lakes, reservoirs and ponds. They adapt well in standing water where stocked.

Spawning Habits - Spawning occurs mostly in rivers and streams in the spring and early summer when



Channel catfish



Blue catfish

waters warm to 70 to 85 degrees. They also will spawn in larger lakes where suitable habitat is available. Eggs are deposited in nests secluded under banks or logs or over open bottom. The male selects the site, often a natural cavern or hole, clears the nest and guards the eggs and young. A female may lay 2,000 to 21,000 eggs that hatch in six to 10 days depending on water temperature. Males protect the fry until they leave the nest in about a week.

Feeding Habits - Feeds primarily at night using taste buds in the sensitive barbels and throughout the skin to locate prey. Although they normally feed on the bottom, channels also will feed at the surface and at mid-depth. Major foods are aquatic insects, crayfish, mollusks, crustaceans and fishes. Small channels consume invertebrates, but larger ones may eat fish. Contrary to popular belief, carrion is not their normal food.

Age and Growth - Maximum size attained in Florida is about 45 pounds. The fish's weight generally averages 2-4 pounds. Studies indicate 14 years as the maximum age, but some fish probably live 15 to 20 years.

Common Names - channel cat, hump-back blue, forktail cat, great blue cat, silver cat, chucklehead cat, blue fulton

Description - Adult fish have stout bodies with prominently humped backs in front of the dorsal fin. They resemble channel catfish by having deeply forked tails, but are dissimilar because they are unspotted and have a long, straight-edged anal fin with 30 to 35 rays. The back and upper sides are blue to slate gray, and the lower sides and belly are white. The internal air bladder has a constriction in the middle, giving it a two-chambered appearance.

Subspecies - There are no recognized subspecies. They are known to naturally hybridize with channel catfish. The channel-blue hybrid is popular among aquaculturists.

Range - Found in the Escambia and Yellow rivers in northwest Florida. Blues were first officially recorded in 1990 by Florida Game and Fresh Water Commission biologists despite reports that anglers had been catching blues for many years.

Habitat - Blues occur in big rivers and in the lower reaches of major tributaries. They prefer clearer, swifter water than other catfish, and are usually found over sand, gravel or rock bottoms. Their preferred water temperature is 77 to 82 degrees.

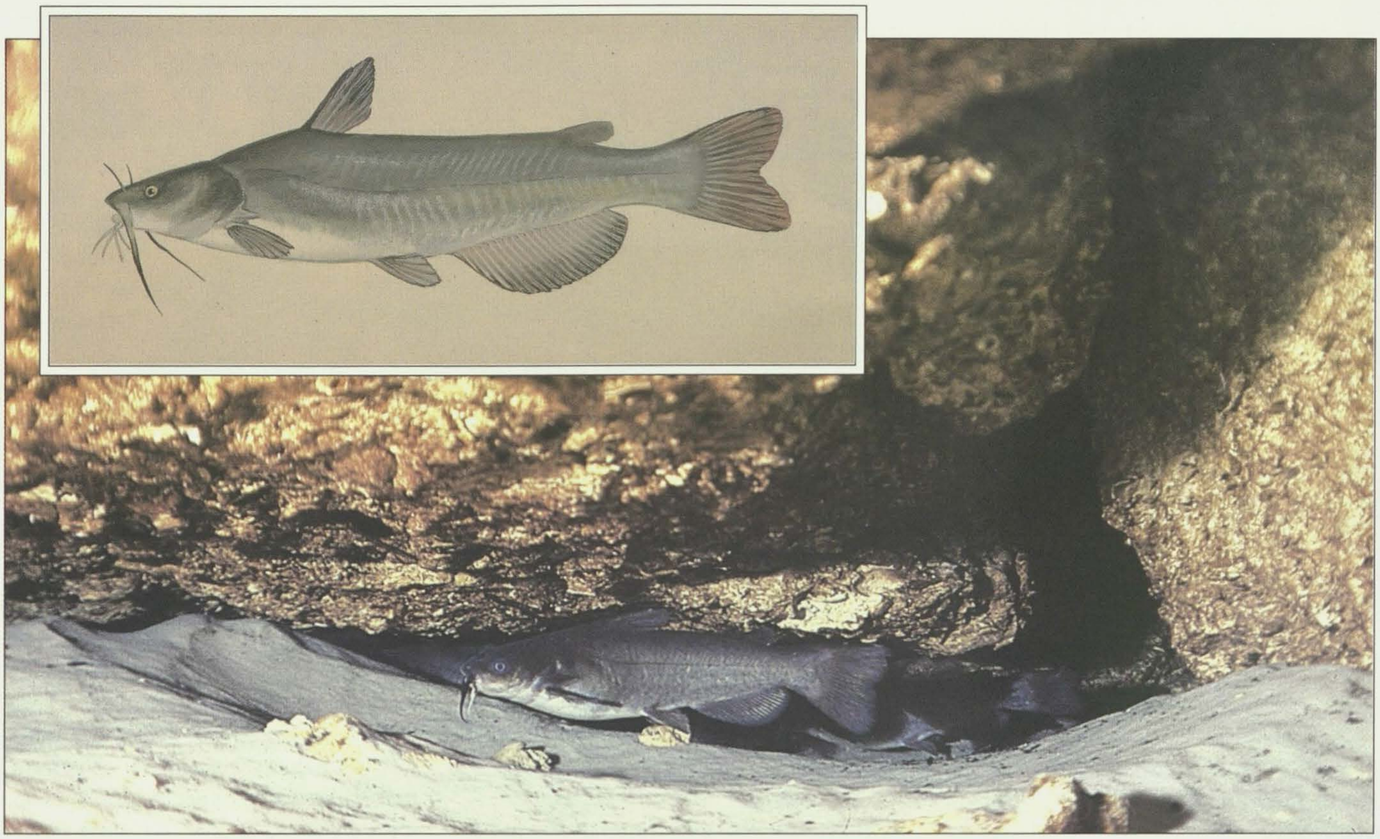
Spawning Habits - Spawning and nesting behavior is similar to others of its family. In late spring, males commonly choose and clear a nest site, usually in drift piles, logs, root systems or other dark, secluded areas near the bank. The eggs hatch in about a week, and males guard the fry in the nest until they swim away a week or so later.

Feeding Habits - Young blues eat aquatic insects and small fish while larger blues prefer crayfish, mussels and other fish. They feed primarily at night.

Age and Growth - Blue catfish grow faster and live longer than channel catfish. They are the largest member of the catfish family. Blues may grow to lengths of over 55 inches and may weigh more than 100 pounds. Maximum life span for blues is unknown but is probably 20-25 years.

Sporting Qualities - One of the strongest freshwater fish; blues are caught on bush hooks or trotlines as well as rod and reel. The most effective baits are cut fish, live fish and nightcrawlers. They also will take prepared and rotting baits. Most are caught while bottom fishing with cut fish, rigged on large hooks weighted down by heavy lead sinkers.

Eating Quality - Considered an excellent food fish with white, firm, ▷



White catfish

delicately flavored flesh.

Records - World Record: 109.25 pounds, caught in the Cooper River, Moncks Corner, South Carolina, in 1991. State Record: 53 pounds, caught in the Escambia River, Santa Rosa County, in 1990.

WHITE CATFISH

Common Names - forked-tail cat, catfish

Description - The sides are blue-gray to blue-black and may be mottled. The tail is moderately forked, and the anal fin is shorter and rounder than that of channel or blue catfish. Whites have only 19-22 anal fin rays. The chin barbels are white or yellow. They have a blunt, more-rounded head, and they lack black spots on their body.

Subspecies - None

Range - In Florida, they are found statewide in rivers and steams and in slightly brackish coastal waters.

Habitat - Usually found in slow-moving streams, river backwaters, reservoirs and ponds. They will tolerate a siltier bottom and higher salinity, and prefer water temperatures of 80 to 85 degrees.

Spawning Habits - As with other members of its family, they are nest builders, and the male guards the young for some time after they hatch. Both parents help excavate the large nest, usually on a sand or gravel bar. Spawning occurs in the early summer when waters reach about 70 degrees.

Feeding Habits - Although fish are their major food, whites also eat larval aquatic insects, small crustaceans, fish eggs and aquatic plants. They may feed at night, but are not as nocturnal as other catfish.

Age and Growth - Whites grow more slowly than other catfish species. Fish as old as 11 years have been documented. They seldom exceed a weight of 3 pounds.

Sporting Qualities - Among the catfishes found in Florida, the white is second only to the channel catfish in popularity. Live bait, especially minnows and worms, accounts for most caught whites, but they also will take cut and prepared baits.

Eating Quality - An excellent food fish, whites are prized for their firm, white flesh.

Records - World and State Record: 18.88 pounds, caught in the Withlacoochee River, Marion County, Florida, in 1991.

YELLOW BULLHEAD

Common Names - butter cat, yellow cat, creek cat, white-whiskered bullhead, greaser, polliwog, chucklehead cat

Description - The yellow bullhead closely resembles the brown bullhead with a squat body and a round or square tail. It is yellow-olive to slate-black above and lighter, often yellow to yellow-olive, on its sides with little to no mottling. The belly may be white, cream or yellow. The chin barbels are yellow to buff or pale pink; the upper barbels, which are light to dark-brown, help distinguish this species from brown bullheads. The anal fin has a straight margin with 23 to 27 rays.

Subspecies - There are no known subspecies.

Range - Occurs statewide.

Habitat - The habitat is variable and includes vegetated areas of clear, shallow lakes, reservoirs, ponds and slow-flowing streams. They are more tolerant of polluted environments than most other members of the catfish family.

Spawning Habits - Spawning occurs in May and June as a rule, with eggs deposited in a nest usually adjacent to a submerged object. One or both parents take part in building the nest, and take turns caring for the eggs, which may number 2,000 to 4,000 and hatch in five to 10 days. The male guards the eggs and fry.

Feeding Habits - Though scavengers, yellow bullheads prefer to feed on minnows, snails, shrimp and crayfish. They also will feed on insect larvae, vegetation and decaying organic matter. Scent and taste play a vital role in their feeding, most of which is done at night.

Age and Growth - Little information is available on age and growth of this species. Generally, they average less than a pound but can grow up to 3 pounds.

Sporting Qualities - Easy to catch on cut bait, worms, crickets, doughballs and a wide variety of natural and prepared baits. They can be caught at any time of day, but bite best at night. They are not strong fighters.

Eating Quality - They are important as a food fish in some areas and are the dominant species in some waters. The creamy flesh is quite good when taken from clean water.

Records - World Record: 4.25 pounds, caught in Mormon Lake, Arizona, in 1984. State Record: None.

BROWN BULLHEAD

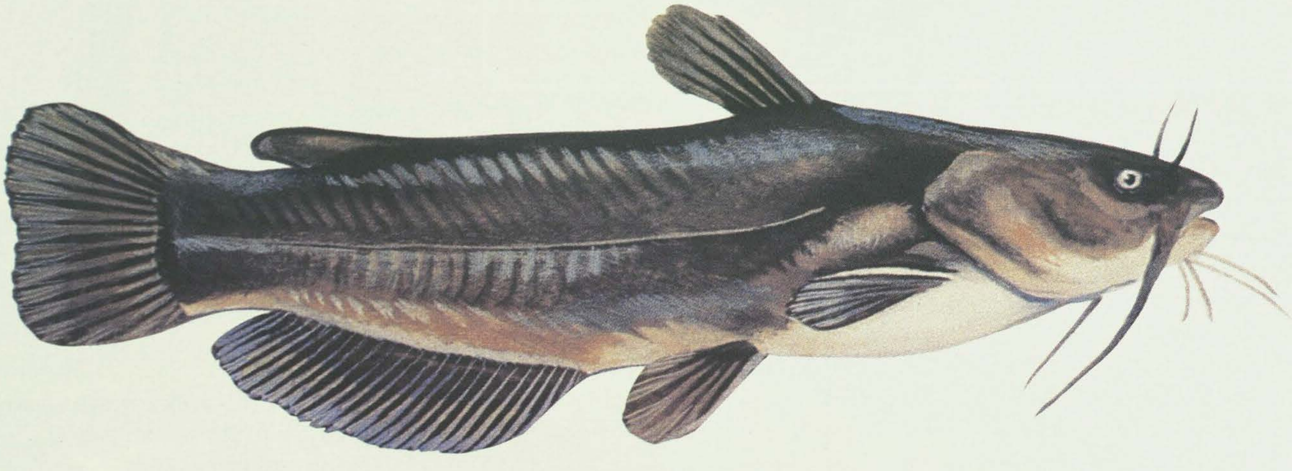
Common Names - creek cat, mud cat, horned pout, red cat, speckled cat

Description - The chin barbels on browns are pigmented, not whitish as with yellow bullheads. The sides of brown bullheads have a distinct, irregular brownish mottling over a light background. The belly is creamy white. They have square tails and 20 to 24 anal ray fins.

Subspecies - Two are recognized: the northern brown bullhead and the southern brown bullhead. Brown bullheads also are known to hybridize with black bullheads.

Range - Throughout Florida, except in the extreme southern part of the state.

Habitat - Browns generally inhabit still or slowly flowing warm waters in ponds, lakes, reservoirs, large rivers and sluggish streams. They prefer water temperatures of 78 to 82 degrees, but can survive in warmer waters. They inhabit areas with mud or deep muck as well as sand or gravel bottoms. ▷



Yellow bullhead catfish

Spawning Habits - Browns are nest builders and often select a site next to some underwater object such as a rock or log. Both parents often care for the eggs, and guard the young up to a size of one inch. At times the parent fish have been observed picking up the eggs or fry in their mouths to clean them, depositing them back in the nest afterwards.

Feeding Habits - They are primarily bottom feeders, feeding mostly at night. Highly sensitive barbels enable them to smell a wide variety of food such as insects, plant material, carrion, small fish, snails, crayfish, worms and leeches.

Age and Growth - Browns are the largest of the bullheads and occasionally reach a weight of 3 pounds, although they average closer to 1 pound or less. The maximum age is about 12 years.

Sporting Quality - Fair fighters, they are easy to catch with baits such as worms, minnows, shrimp, chicken innards and stinkbait. They bite throughout the day, but fishing is best at night.

Eating Quality - A good food fish, only slightly inferior to the white and channel catfish, if caught from clean waters.

Records - World Record: 5.50 pounds, caught in Veal Pond, Georgia, in 1975. State Record: None Exists.

FLATHEAD CATFISH

Common Names - yellow cat, mud cat, shovelhead cat, johnnie cat, goujon, appaluchion, opelousas

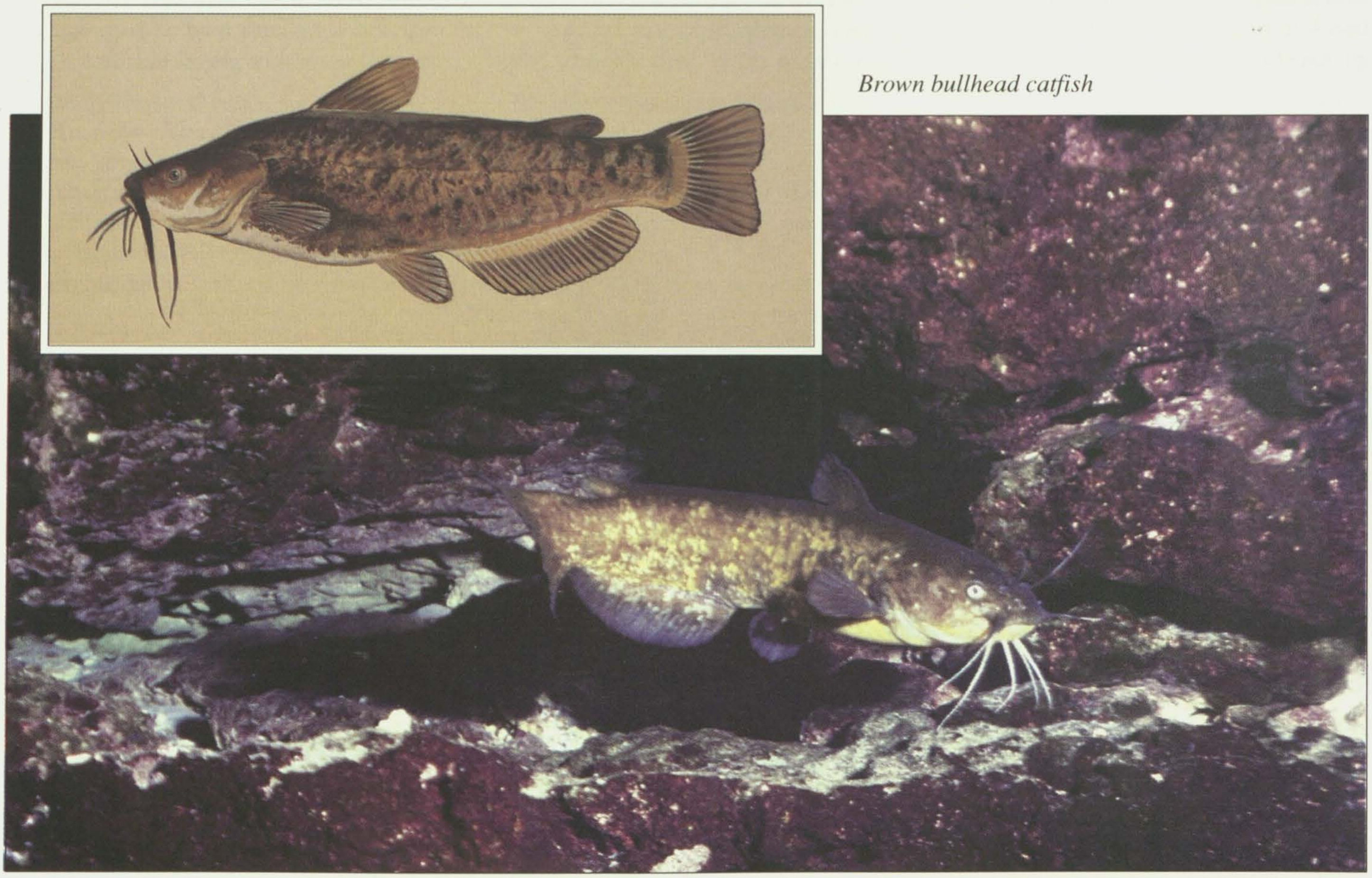
Description - A flattened head, tiny eyes, squarish tail and protruding lower jaw distinguish the flathead from other catfish and contribute to it being placed in a genus of its own. They are yellow-brown and usually mottled above, with a creamy-white or yellow belly. Small flatheads may be confused with yellow or brown bullheads.

Subspecies - There are no known subspecies; however, they have been known to hybridize with channel catfish.

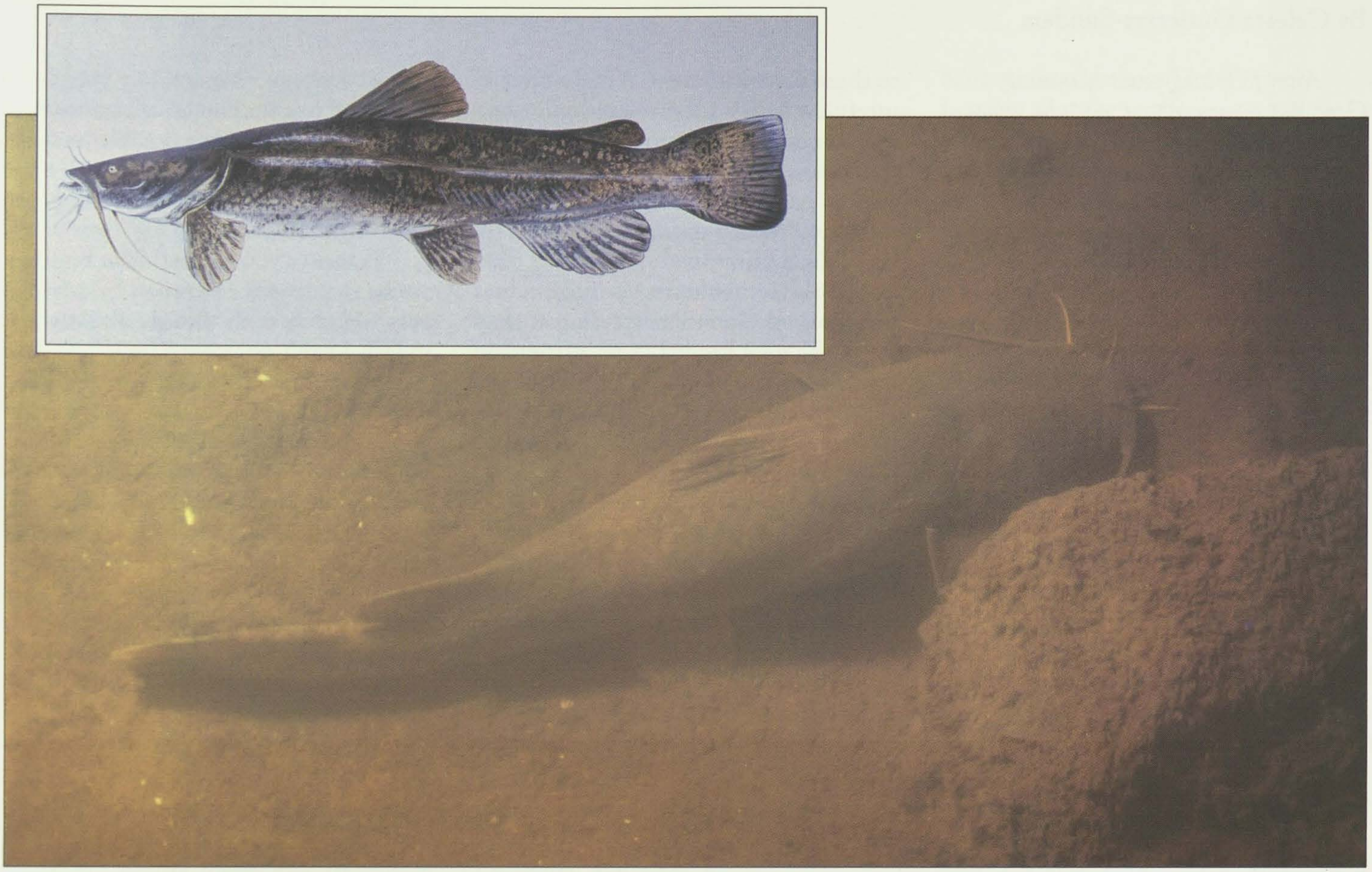
Range - The distribution of flatheads in Florida is limited. Populations of notable size are found in the Apalachicola and Escambia rivers in the Florida Panhandle.

Habitat - Flatheads are found mainly in large rivers and their major tributaries. They prefer long, slow-flowing, moderately-turbid streams. Adult flatheads are solitary and spend most of their time in deep water near cover such as log jams or fallen trees.

Spawning Habits - Spawning occurs in late spring when water temperatures reach 70 to 80 degrees. One or both parents excavate the nest that is usually made in a natural cavity or near a large submerged object. Females lay a golden-yellow mass of up to 100,000 eggs. The nest is guarded



Brown bullhead catfish



Flathead catfish

and the eggs are agitated by the male to keep them clean and aerated. The young remain in a school near the nest for several days after hatching, but soon disperse.

Feeding Habits - Flatheads are predatory fish and will consume bass, bream, shad, crayfish and often feed on other catfish. The young rely more extensively on aquatic insects and crayfish than do the adults. Large flatheads sometime congregate where food is plentiful such as near tailraces of dams. They often feed at the surface or in shallow water at night, returning to their residence in a hole or brush pile to rest during the day. They rarely eat dead or decaying matter.

Age and Growth - Although flatheads have been aged by biologists to 19 years, the species is probably capable, based on its maximum size of about 56 inches, of living much longer. They grow faster than any other catfish except blue.

Sporting Qualities - Extremely strong fighters. Their solitary lifestyle, however, makes them more difficult to catch than other catfish. They bite best at night while in shallow water looking for food. To catch flatheads, anglers typically fish on the bottom using heavy tackle with live or freshly cut fish. Trotlines are effective in catching this species.

Eating Quality - The species is highly regarded as a food fish when taken from clean water. The meat is white, firm, and flaky, with an excellent taste.

Records - World Record: 91.25 pounds, caught on Lake Lewisville, Texas, in 1982. State Record: 33.09 pounds, caught in the Apalachicola River, Jackson County, in 1992.

Mark A. Trainor is a public information specialist in the Commission's Tallahassee office who focuses on fishery topics.

By Celeste Gutierrez-Sanders

After four long years of waiting, Gene Bowers was about to get his chance. His name was one of 500 picked from among 7,500 applicants who tried for permits to hunt modern dinosaurs of the deep – alligators!

Steam rose from the wet, hot pavement, drifting to hover in a mist over nearby Lake Iamonia. The moon was full, the wind calm and the temperature comfortable for August in Florida.

Reporters on shore already had spotted alligators when Bowers and his hired hands for the night, professional nuisance alligator trapper Tony Hunter and assistant Jeff Grantham, pulled up to the boat landing.

Bowers, a 55-year-old state communications consultant and former U.S. Marine, wasn't expecting the glare of camera lights, but he was glad to share his excitement. After a brief interview with a local television reporter and a round of good luck from well-wishers, the three men slid their 17-foot bateau into the still, black water and settled down for what was to be a long night.

With Hunter acting as lookout at the bow and Grantham steering at the stern, the men headed in no particular direction. Within minutes they spotted an 8-foot alligator. Bowers had been told the lake was teeming with them. There was just one problem. The alligators in this lake were extremely timid. Lake Iamonia is reputed to be one of the hardest lakes in Florida to hunt alligators.

"We'll be lucky if we get five 8-foot alligators," Hunter lamented.

He was right. Mostly young, unwise hatchlings remained on the surface whenever the boat headed toward a group. Those of any consequence, 6 feet and up, dived immediately. Many escaped so quickly underwater that Hunter, a 16-year professional alligator trapper, had a hard time estimating size.

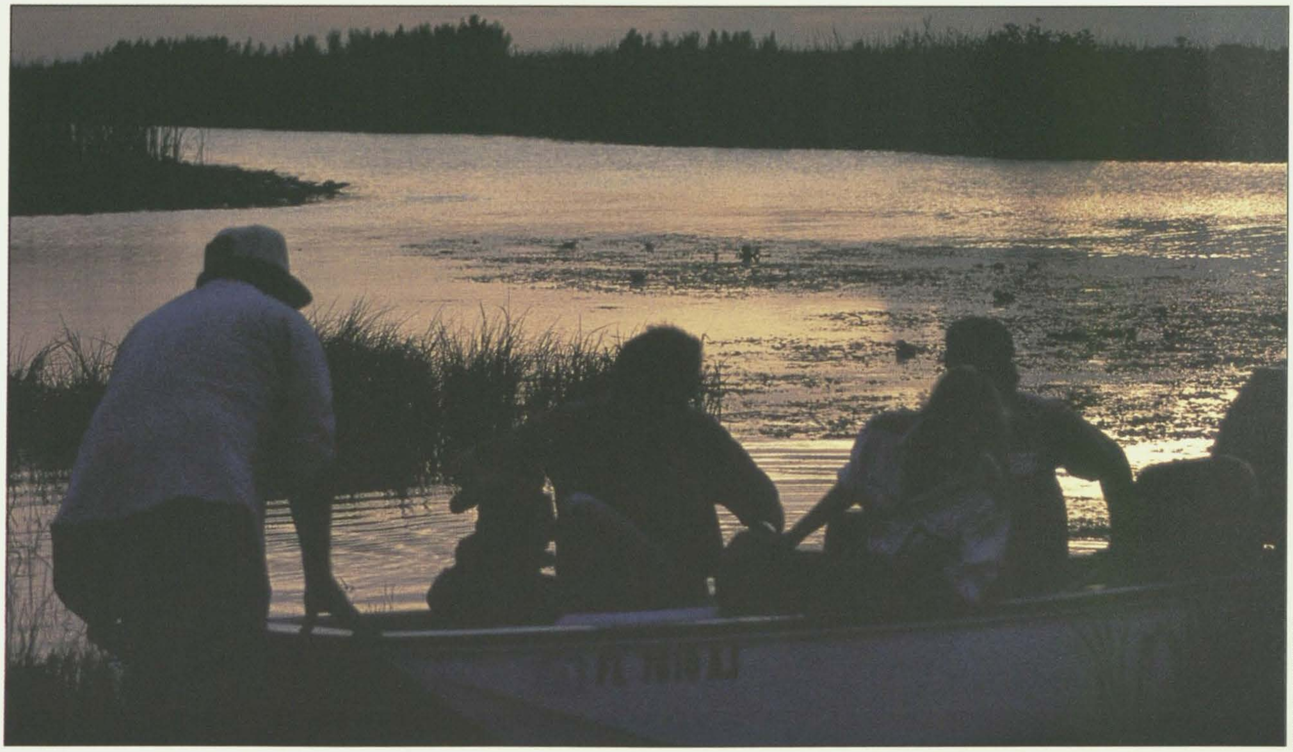
"Usually you can tell how big they are by the distance between their eyes," Hunter said. "But they're diving so fast, I can't get a good look."

Undaunted, he guided the boat to a nearby cove where a 10-foot alligator was said to be lurking. He spotted it, but like the others, it dived before the boat could get within harpoon distance. They all earnestly searched the water for bubbles, the telltale sign of a submerged gator, but to no avail. Undeterred, they decided to wait for the alligator to surface.

The moon cast a bright reflection on the lake, illuminating hundreds of waterbugs dancing on the surface.

TALES FROM THE DEEP

An Allig



JIM HUFFSTODT

Frogs jumped about the lily pads looking for dinner. Occasionally, the odor of methane from decaying vegetation scented the soft breeze. In the distance, a dog barked disapproval of the intrusion.

The men waited. They neither talked nor moved, except to turn on the little electric trolling motor to keep the boat in position. Somewhere, an alligator lay at the bottom of the lake, also waiting.

After an hour passed, Grantham revved up the motor. The 10-foot alligator still hadn't surfaced, or if it had, did so without being detected. Once again the men headed into open water in search of prey.

With a searchlight strapped to his head, Hunter scanned the water for an 8-foot gator. He directed Grantham along the weed-choked lake, waving his hand left, then right, his glowing cigarette like a ground air-traffic controller's torchlight. Finally, just when Bowers started to wonder if they were going to catch anything, an alligator was on the run.

The men gave chase, careful to keep the alligator within sight. As long as the gator was running, the men had a chance. If it dived, the hunt would be over.

For 10 tense minutes, the men followed the alligator as well as they could around the floating islands of grass.

When it reached deeper water, it dived, but Hunter probed his harpoon in the water, forcing the reptile to surface. Then Hunter lunged and the harpoon found its mark.

Instead of thrashing about, the alligator grew amazingly quiet as it was pulled toward the boat. The men instructed Bowers on how to use the bang stick, a tool used in alligator hunting that fires upon contact, and after a quick lesson, he walked to the front of the boat and dispatched the gator. The natural drama of predator and prey had run its course.

For this adventure, Bowers has paid a $250 license fee to the Commission, and purchased $50 licenses for each agent who participates with him in the hunt. He will be able to sell the alligator meat (about $5 per pound wholesale) and the hides (about $22 per linear foot.)

According to Nick Wiley, biologist with the Commission, the hunts play an important part in the conservation of the alligator. "We allow people to participate in alligator hunts not only for the recreational and economic benefits," said Wiley. "We want people to understand the importance of alligators in wetlands, and the ▷

ator Adventure

DAMON TUCCI

need to conserve their habitat.

"Alligators are a key species in wetland ecology," he continued. The reptiles wallow out holes that often, especially during periods of drought, become a haven for fish, turtles, frogs, wading birds and other wildlife.

The Commission requires the chosen hunters to attend a three-hour pre-hunt training session. "I think the hunts serve their purpose," Wiley said. "I believe that afterwards, the hunters have a renewed appreciation for wetlands and their conservation."

After a cursory examination and a photo session with his take, the delighted Bowers put away his camera, reached into his bag and pulled out a thermos. "Coffee?" he asked.

The trappers declined and were soon ready to resume the hunt.

The stillness of the night contrasted with the roar of the 18-horsepower engine as it cut through the black water. Caution lights from a radio tower twinkled on the horizon. The alligators maintained their distance. It would be two hours before the men would get another.

They drove back and forth across the lake, from one clearing to the next, searching until Hunter could no longer stand the heat from the light strapped to his head. Then they searched more. Bowers used a flashlight to help illuminate the lake, but it wasn't much assistance. The gators were just too quick.

As they headed back toward the cove where they first spotted the 10-foot gator, they came upon an 8-footer near an island of grass. The alligator had slipped into the water too slowly and the men were soon upon it.

The gator dived, but the bubbles revealed its location. Hunter used his harpoon to prod it to surface, but the reptile was determined to escape. The chase soon became a test of perseverance, wit and skill as the gator scrambled left and right trying to elude the hunters. After circling underwater for several minutes, the gator surfaced for air. Hunter had him.

There was no mistaking its fury upon capture. Unlike the first gator, it flailed the water, lashing its tail against the side of the boat and soaking its captors. Hunter held steadfast.

Grantham and Hunter decided it was safer if they killed the gator, so Bowers watched and took pictures from the back of the boat. When they pulled the reptile into the vessel, it proved to be a fine specimen. It wasn't longer than the other, but it was definitely bigger.

By then it was 2 a.m. and if their luck, or lack of it, held steady, it would be 4 a.m. before they bagged another alligator. The trappers were tired and headed back toward the boat ramp, but Bowers was still enthusiastic. They had used only two of the five permits he was allotted for the hunt and he was eager for more.

In the past, Bowers had hunted grizzly bear, Dall's sheep and caribou, but alligators were different.

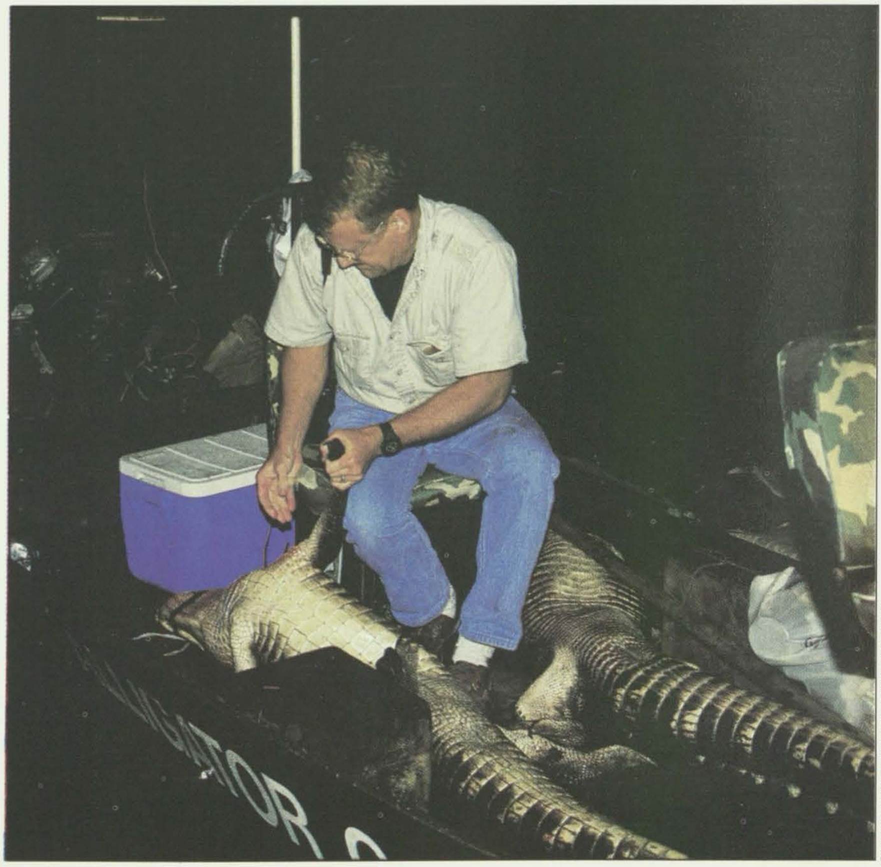
"There's a primeval swiftness and power that alligators have," Bowers said. "They can go 10-15 miles an hour but lack stamina.

"It's very exciting because you have to harpoon the thing at close range. I had intended to harpoon one myself, but my eyesight isn't very good," he added. "I had trouble picking the alligators out of the fruit salad on top of the water."

Upon reaching shore the trappers got out of the boat and lay on the mud-splattered boat ramp, ignoring the dirt beneath them and the mosquitoes hovering over their heads. After some discussion the men convinced Bowers to "try again tomorrow." After all, it was almost dawn and tomorrow was already upon them.

The following night the men harpooned a $9^1/_2$-foot alligator, but they had to hunt until 7 a.m. to find it. They took a $7^1/_2$-foot and a $9^1/_2$-foot gator the following week, filling their allotted quota.

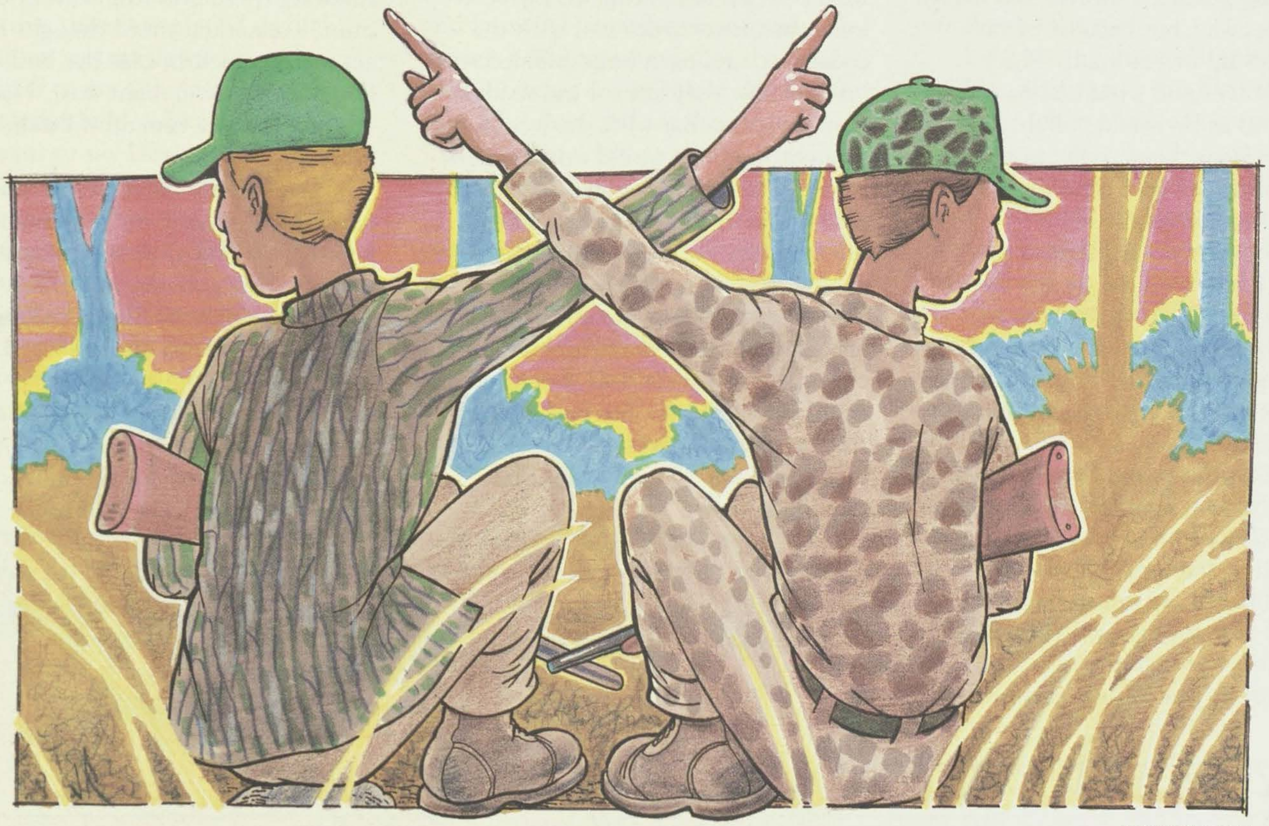
Celeste Gutierrez-Sanders recently resigned as public information specialist with the Commission to take a position with the Department of Health and Rehabilitative Services.



CELESTE GUTIERREZ-SANDERS

A Light-Hearted Yarn By Two Turkeys

Two Accounts of the Same Hunting Trip



JOHN ROBERGE

Dewey's Version

by Lt. Dewey A Weaver

Light is slow to come on this cloudy morning. The ominous clouds threaten rain at any moment, but optimism runs high as my hunting partner and I discuss the tactics of turkey hunting.

With me this morning is Stan Kirkland, the public information coordinator for the Commission's northwest region. We have become friends over the years and, like all friends, specialize in double talk. When Stan tells me to do the calling and try to kill the bird, it is interpreted as, "I don't think I can call him close enough, so I'll try to shoot the bird when he comes by me, heading toward Dewey." Of course, he'll deny that and say he only wants to give me a chance, because if he calls, gobblers will come all the way from south Alabama just to meet the lovely hen.

To be thoroughly enjoyable, turkey hunting must be done with good friends to share the thrills and excitement, plus the teasing. This morning's hunt actually began last night with the long drive from Lake City to Lynn Haven near Panama City. I arrived early to visit with Stan's family and get a good night's sleep. The plan was to wake at 3:30 a.m. and reach the woods before daylight. (My wife believes that you can identify turkey hunters in the spring by the red eyes at noon.)

When we left Lynn Haven the sky was clear with stars twinkling, but as we neared our hunting spot the clouds increased. Rain was almost certain, and we saw a flash of lightning on the horizon. Our enthusiasm faded with the few light drops of rain. We were determined to hunt before or after the rain. At the hunting area, we hurried into the woods as if being there would forestall the rain.

Long shadows of night hung in the ▷

trees, giving them an eerie appearance. The first of Stan's owl hoots brought no response. His remark to the silence, "I was trying to be too soft. If I hoot loud I'll wake up too many gobblers." Of course, I knew he meant "I sure hope there is a bird around here." On the second try, a gobbler gave a resounding gobble. The bird was barely 100 yards away, but because of the wind, hearing was difficult. The rustling leaves and wind had no effect on the bird as he would gobble to every owl hoot. Upon reflection, the wind probably helped Stan's sickly owl hoot sound more realistic.

We quickly made plans to surround the bird with me on the direct approach and Stan on the opposite side. It didn't matter which side of the ravine the bird chose to fly down, one of us should get a chance to see and call the gobbler.

Early in the morning I tend to let my guard down, so when Stan said for me to call the bird because he wanted me to kill it, I should have been alerted. I could say that because it was still dark, I couldn't see his lips move and didn't know he was stretching the truth. However, I believed him and went searching for just the right area to begin calling. I settled in and gave my finest yelp, inducing an immediate answer from the gobbler. Then a second gobbler answered.

The birds flew down on a ridge with a ravine separating us. I gave a lonesome, love-struck call with the cedar box, and both birds gobbled to let me know they knew I was ready. Not being familiar with the woods, I thought the birds would work straight to me. When they gobbled again, they were down in the ravine and I could tell from the hollow sound of the gobble that something was wrong. I called again, a long, pleading series, and both birds answered and were closer. After a short wait, I clucked a couple of times and one bird gobbled – this time on my level and closer. The bird was about 75 yards away and moving my way.

The sound of the shot startled me, and my first thought was, "Who else is hunting here?" I could hear the bird beating its wings on the ground and decided to see who had the nerve to shoot my bird, one I had called from one ridge to the next, down an 80-feet-deep ravine, across the bottom, and 80 feet back up to my level. A feat that only the greatest turkey callers can accomplish.

When I got to the bird, who was standing there grinning with pride but Stan. I remarked that I thought he was across the creek in case the bird went that way. His comment was, "I knew you would scare him off if I didn't help."

The bird weighed 19 pounds 8 ounces and sported an $11^1/_2$-inch beard. The next time you want to kill a nice spring gobbler, just take a friend – tell him or her to do the calling and kill the bird. After all, it worked for Stan.

If you get Stan to tell his story of this hunt, make sure it is during the day so you can see his lips move. If they are, he won't be telling the truth.

Lt. Dewey A. Weaver is a public information director for the Commission's northeast region.

Stan's Version

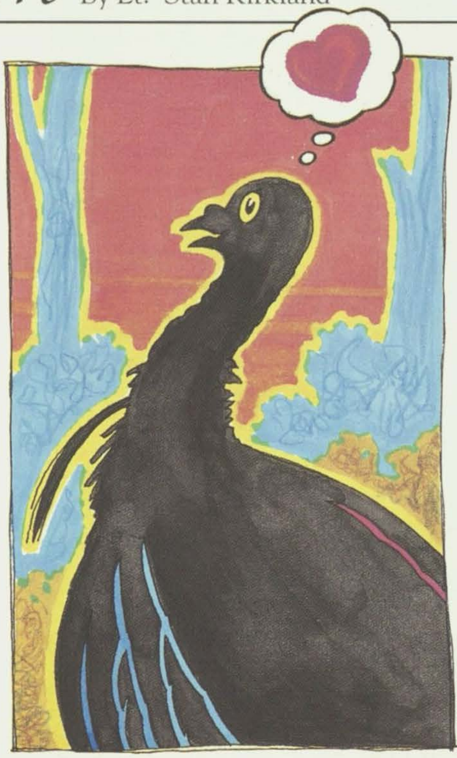
By Lt. Stan Kirkland

Dewey Weaver and I are good friends. He works in Lake City and I work in Panama City. We have similar jobs with the Game and Fresh Water Fish Commission. When I found out he would be in town overnight on March 22, I told him I wanted to take him fishing.

"No," he told me, "I'd rather go turkey hunting." So a turkey hunting trip was planned.

We decided to hunt the Robert Brent Wildlife Management Area in Liberty County. It had been two years since I had hunted the area, but I told Dewey we'd give it a try.

We left my Lynn Haven home at 3:30 a.m. March 23 and after many turkey hunting stories that bordered on distortions and outright lying, we arrived at our destination in the pre-dawn darkness. My stories, I might add, were all based in fact but I'm not so sure about Dewey's. We quietly slipped out of my truck and walked across a field and into a stand of timber overlooking a creek bottom.


JOHN ROBERGE

Telling Dewey to stop, I cupped my hands and let loose with an imitation of a barred owl hooting that I'd have to admit was so real it probably had other owls wondering who the new guy on the block was. Almost immediately, a gobbler answered and gobbled not once but two or three times. I looked at Dewey and he looked at me and in a whisper I told him, "Dewey, you take this bird. I want you to get him. I'm not going to yelp. I'm going to go back by the truck and walk up the branch and just get out of the way."

And so I hurriedly made the half-mile walk to a spot where I could enjoy listening to Dewey working this bird. I sat down with my back to a good-sized oak and while making myself comfortable, slipped my camouflage head net over my face and put on my camo gloves. This camo stuff, by the way, was just to keep the mosquitos off me.

By this time it was good daylight, and as soon as I sat down I heard Dewey, off to my left, "cranking" away on this hand-held yelper of his. Now, I don't want to say Dewey's yelping was bad, but the only comparable sound I've heard was when the smog pump went out on my uncle's Dodge Dart. Occasionally, though, after Dewey would call, the gobbler would respond with a reverberating "Gil-OOBLE-ooble-ooble." Sometimes the big gobbler would double-clutch (that's turkey hunter talk for gobble more than once.) I'm not sure if the turkey was gobbling in response to Dewey's yelping or simply following some primeval urge, but at any rate the turkey did gobble sporadically.

After sitting there for what seemed like forever listening to Dewey trying to fool this gobbler into thinking he was a cute, sexy hen wanting a date, and knowing from the occasional distant gobbling sound that this bird wasn't buying any of this, I decided to "cluck" to him and see if he was interested in a little variety – you know, the spice-of-life routine.

Using my mouth yelper, I made two quick, short clucks. Even though the gobbler was probably 200 yards down the creek, he immediately let loose a "Gil-OOBLE-ooble-ooble." When he gobbled back I thought, "That's interesting," but after all, this was Dewey's bird, so I put my mouth yelper back in my pocket.

Perhaps a minute or two went by and then another "Gil-OOBLE-ooble-ooble" boomed from the creek bottom. This time I could tell the gobbler had flown down from the roost and was probably no more than 100 yards down the creek. Another minute or two passed and he gobbled again, this time out about 75 yards.

I was sitting there watching and thinking that surely this bird was going to Dewey when I looked up and there came the gobbler, headed toward me down a fire lane. When the big gobbler was 35-40 yards out from me and standing in front of a huge hickory, I put the bead on his head and pulled the trigger of my Remington 1100 shotgun.

The #6 shot found their mark and instantly, the gobbler went down flopping. I jumped up and ran to the bird, and while I was standing there admiring the bird's size and beard length, I looked up and Dewey came walking through the woods.

He stood there, half-smiling and asked me, "Did you shoot that bird?"

"Yes," I responded, and then his next question was, "Did you yelp?"

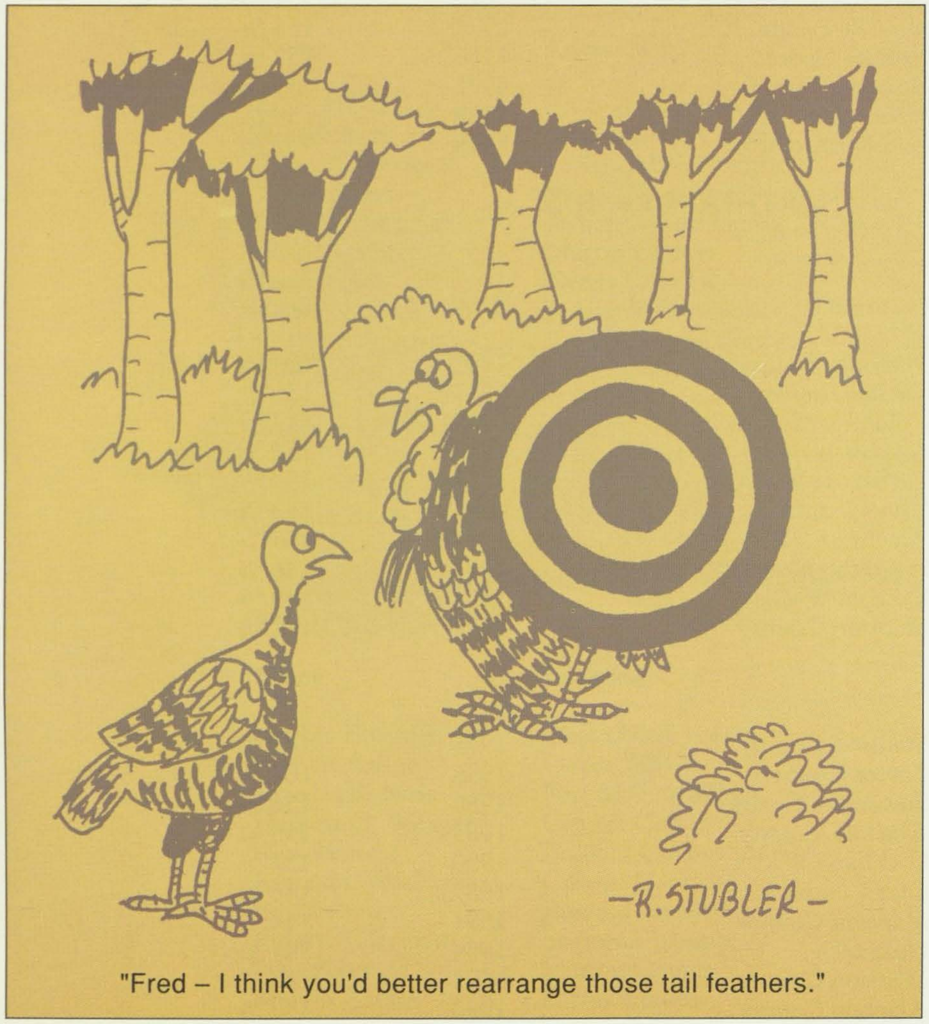
"No, I didn't yelp," I said. And after a long pause I added, "But I did cluck."

Although several things were said after this, alluding to both his and my turkey hunting ability, I distinctly remember Dewey saying something to the effect that if we ever go turkey hunting together again, and I'm the guide, my gun is staying in the truck and my yelper is going in his pocket.

The turkey, incidentally, weighed 19 lbs., 8 oz., had an $11^1/_2$-inch beard and one-inch spurs. It was a magnificent bird. Dewey was a good sport and even helped me carry my bird out of the woods when I got tired.

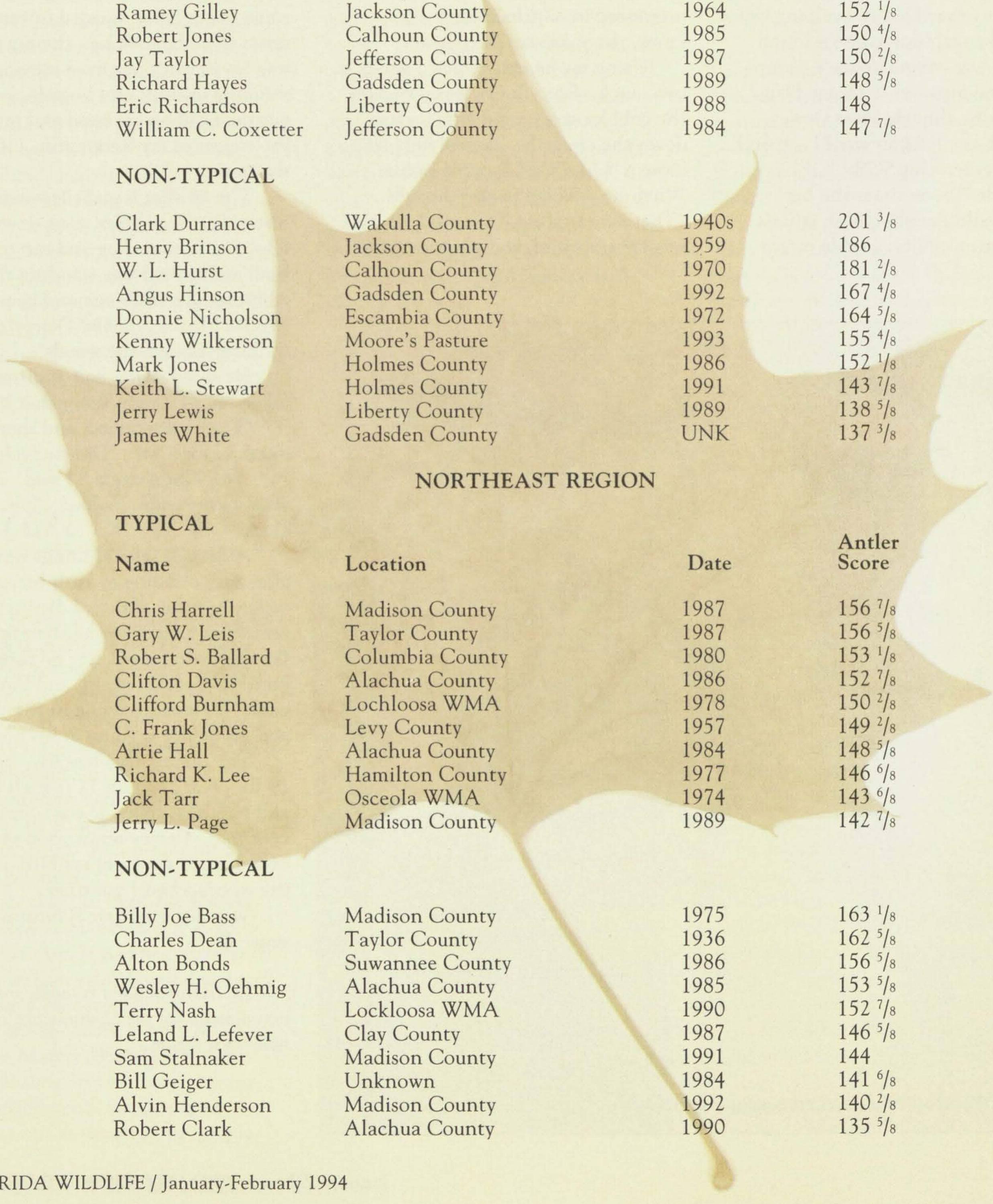
Wonder where we'll hunt next year?

Lt. Stan Kirkland is public information director for the Commission's northwest region.



"Fred – I think you'd better rearrange those tail feathers."

FLORIDA BUCK REGISTRY REGIONAL RANKING



NORTHWEST REGION

TYPICAL

Name	Location	Date	Antler Score
Larry Furr	Gadsden County	1977	168 1/8
Danny Raines	Jackson County	1973	154 3/8
H. M. Butler	Gadsden County	1979	153 7/8
Nancy Sumner	Liberty County	1981	152 3/8
Ramey Gilley	Jackson County	1964	152 1/8
Robert Jones	Calhoun County	1985	150 4/8
Jay Taylor	Jefferson County	1987	150 2/8
Richard Hayes	Gadsden County	1989	148 5/8
Eric Richardson	Liberty County	1988	148
William C. Coxetter	Jefferson County	1984	147 7/8

NON-TYPICAL

Name	Location	Date	Antler Score
Clark Durrance	Wakulla County	1940s	201 3/8
Henry Brinson	Jackson County	1959	186
W. L. Hurst	Calhoun County	1970	181 2/8
Angus Hinson	Gadsden County	1992	167 4/8
Donnie Nicholson	Escambia County	1972	164 5/8
Kenny Wilkerson	Moore's Pasture	1993	155 4/8
Mark Jones	Holmes County	1986	152 1/8
Keith L. Stewart	Holmes County	1991	143 7/8
Jerry Lewis	Liberty County	1989	138 5/8
James White	Gadsden County	UNK	137 3/8

NORTHEAST REGION

TYPICAL

Name	Location	Date	Antler Score
Chris Harrell	Madison County	1987	156 7/8
Gary W. Leis	Taylor County	1987	156 5/8
Robert S. Ballard	Columbia County	1980	153 1/8
Clifton Davis	Alachua County	1986	152 7/8
Clifford Burnham	Lochloosa WMA	1978	150 2/8
C. Frank Jones	Levy County	1957	149 2/8
Artie Hall	Alachua County	1984	148 5/8
Richard K. Lee	Hamilton County	1977	146 6/8
Jack Tarr	Osceola WMA	1974	143 6/8
Jerry L. Page	Madison County	1989	142 7/8

NON-TYPICAL

Name	Location	Date	Antler Score
Billy Joe Bass	Madison County	1975	163 1/8
Charles Dean	Taylor County	1936	162 5/8
Alton Bonds	Suwannee County	1986	156 5/8
Wesley H. Oehmig	Alachua County	1985	153 5/8
Terry Nash	Lockloosa WMA	1990	152 7/8
Leland L. Lefever	Clay County	1987	146 5/8
Sam Stalnaker	Madison County	1991	144
Bill Geiger	Unknown	1984	141 6/8
Alvin Henderson	Madison County	1992	140 2/8
Robert Clark	Alachua County	1990	135 5/8

SOUTH REGION

TYPICAL

Name	Location	Date	Antler Score
Bill Scharber	Pasco County	UNK	153 5/8
Mike Sherouse	Hernando County	1970	150 7/8
Pete Wyrosdick	Green Swamp WMA	1989	150 7/8
Charles P. Lykes, Jr.	Highlands County	1977	150 6/8
Max Boswell	Glades County	1990	146 4/8
Matt Sullivan	Arbuckle WMA	1979	143
Joe Stokes	Polk County	1987	142 3/8
Joe Stokes	Polk County	1977	141 2/8
Stanley Gude	Pasco County	UNK	140 2/8
Lee Sisson	Hardee County	1988	139 1/8

NON-TYPICAL

Clay H. Mickler	Pasco County	1985	170 4/8
Ronnie W. Elrod	Highlands County	UNK	160 6/8

EVERGLADES REGION

TYPICAL

Name	Location	Date	Antler Score
G. P. Holly	St. Lucie County	1978	145
Jim Wilson	Indian River County	1985	144
Tom McBroom II	Okeechobee County	1966	140 1/8
Reese Suggs	Martin County	1982	137 4/8
Greg Cadenhead	Indian River County	1981	134 1/8
Jack Daughtrey	Martin County	1964	132
Joe T. Lee	Henry County	1972	131 3/8
James N. Orth	Indian River County	1966	131 1/8
Glenn Schenavar	Indian River County	1987	128 5/8
Ellis L. Ross	Palm Beach County	1968	126

NON-TYPICAL

David Wilson	Indian River County	1986	128 4/8
Lonnie Harvey	Indian River County	1986	126 6/8

CENTRAL REGION

TYPICAL

Name	Location	Date	Antler Score
Robbie Hastings	Ocala Nat'l Forest	1940	154 3/8
Melvin Arline	Citrus WMA	1980	152 5/8
Charles Roberts	Fort McCoy WMA	1989	151 4/8
Herbert G. Weagraff	Orange County	1986	149 4/8
Rick Hannis	Brevard County	1985	146 7/8
Ronald L. Waldron	Orange County	1975	144 5/8
Jim Wilson	Brevard County	1984	143 5/8
Randy Alderman	St. Johns County	1966	142 3/8
Pete Peterson	Marion County	1962	142
Melvin Arline	Citrus County	1983	141 5/8

NON-TYPICAL

R. W. Guess	Ocala Nat'l Forest	1984	148 4/8
Michael Rawlings	Three Lakes WMA	1988	145 5/8
Bob Page	Marion County	UNK	132 5/8

TOP 10 FLORIDA BUCK REGISTRY

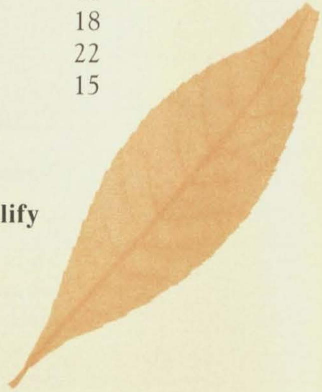
TYPICAL

Name	Location	Date	Antler Score	# Points
Larry Furr	Gadsden County	1977	168 1/8	14
Chris Harrell	Madison County	1987	156 7/8	12
Gary W. Leis	Taylor County	1987	156 5/8	11
Danny Raines	Jackson County	1973	154 3/8	10
Robbie Hastings	Ocala Nat'l Forest	1940	154 3/8	12
H. M. Butler	Gadsden County	1979	153 7/8	12
Bill Scharber	Pasco County	UNK	153 5/8	10
Robert S. Ballard	Columbia County	1980	153 1/8	11
Clifton Davis	Alachua County	1986	152 7/8	11
Melvin Arline	Citrus WMA	1980	152 5/8	15

NON-TYPICAL

Clark Durrance	Wakulla County	1940s	201 3/8	25
Henry Brinson	Jackson County	1959	186	29
W. L. Hurst	Calhoun County	1970	181 2/8	22
Clay H. Mickler	Pasco County	1985	170 4/8	20
Angus Hinson	Gadsden County	1992	167 4/8	16
Donnie Nicholson	Escambia County	1972	164 5/8	14
Billy Joe Bass	Madison County	1975	163 1/8	16
Charles Dean	Taylor County	1936	162 5/8	18
Ronnie Elrod	Highlands County	UNK	160 6/8	22
Alton Bonds	Suwannee County	1986	156 5/8	15

Name	**Qualified**	**Did Not Qualify**
Northeast	406	42
Northwest	641	84
South	201	11
Central	557	70
Everglades	49	12
Subtotal Scored	**1,854**	**219**
Total Scored	**2,073**	



It's The Law

By Inspector Kyle Hill

Question: What can I do about trespassing on my hunt club? I reported it to the Commission and they said they did not enforce trespass laws.

Answer: That is correct. Florida trespass laws are found in Chapter 810.011-10, Florida Statutes. The Florida Legislature wrote the laws so that landowners must become actively involved in court actions against offenders. The county sheriff responds to trespass complaints. Wildlife officers respond primarily to illegal hunting or other conservation crimes on private lands. It is important that landowners meet all the legal requirements for posting if they intend to file trespassing charges. They can file charges through the sheriff, or through the state attorney's office.

"Posted land" is defined as land surrounded by posted signs not more than 500 feet apart. The signs must be at the corners and around the entire boundary. The signs must have letters at least two inches high, with the words "No Trespassing" and the name of the owner or lessee. The signs must be clearly noticeable from outside the boundary. Exceptions to this noticing are:

* No signs are necessary for land less than five acres on which there is a dwelling.

* No signs are necessary for cultivated land which has been cleared and planted with a crop (including trees).

* Fenced land, which has a fence of "substantial construction," need not be posted. It is not necessary to fence any boundary which is formed by water.

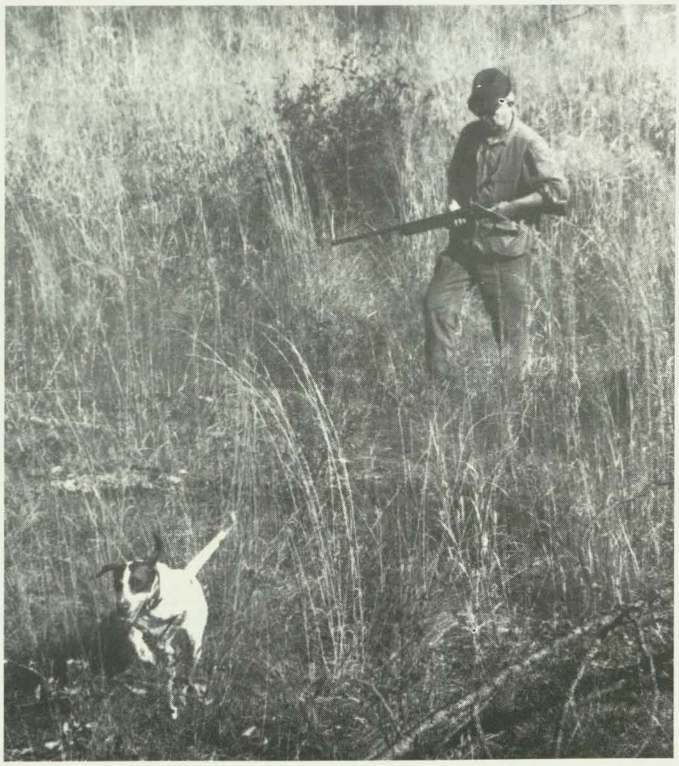
The penalty for trespassing on posted, cultivated, or fenced land is a fine up to $1,000 and/or one year in jail. It is a third degree felony to trespass with a firearm. A third degree felony is punishable by a fine up to $5,000 and/or five years in jail.

Question: I read recently that wildlife officers made arrests for illegal sale of deer, as well as arrests for drugs and illegal possession of automatic weapons? What gives? I thought wildlife officers only enforced conservation laws!

Answer: Wildlife officers are certified and licensed as state law enforcement officers. Thus, they are empowered to make arrests for violations of all state laws including traffic, arson, cattle rustling, burglary, drugs, assault and theft. This is necessary because wildlife officers frequently encounter a wide variety of violations on conservation patrols. It is vital that they have the authority to take quick action to protect the lives and property of citizens.

With this authority, wildlife officers provide a substantial degree of protection to outdoor users and landowners in rural and wilderness areas, where other law enforcement officers rarely patrol.

Floridians may rest assured that wildlife officers will never lose sight of their primary conservation role. However, they will continue to make such other arrests as necessary when discovered during their conservation patrols.



GFC

1992-93 Hunting Accidents

By Captain Ed Tyer

During the 1992-93 hunting seasons, there were 21 firearm or archery-related hunting accidents reported to the Game and Fresh Water Fish Commission. This is a significant drop from 33 such accidents last year and 35 in 1990-91. Thirteen of the 21 accidents were self-inflicted, a figure that is nearly double the number from previous years. There were five fatalities this year. We are always glad to see a reduction in hunting accidents. However, we believe most of these accidents could be eliminated if hunters would **practice the 10 Commandments of Firearms Safety.**

State law requires all hunters born on or after June, 1, 1975 to have hunter safety training before hunting in Florida.

Day/Date	Age of Shooter	Self-Inflicted	Firearm	Game Sought	County	Circumstances
Thursday 07/16/92	40	Yes	Rifle	Hog	Hillsborough	Shooter shot self picking up loaded gun by muzzle.
Tuesday 11/10/92	45	Yes	Bow	Deer	Wakulla	Hunter stabbed self through hand when arrow fell.
Saturday 11/14/92	16	Yes	Shotgun	Squirrel	Dixie	Shooter shot self while forcing breech shut causing gun to fire.
Saturday 11/14/92	58	Yes	Shotgun	Waterfowl	Escambia	Shooter slipped on lake embankment, caught self with gun stock, gun discharged. FATAL
Saturday 11/14/92	12	No	Shotgun	Rabbit	Holmes	Shooter shot self while walking with his finger on the trigger of his loaded shotgun.
Saturday 11/14/92	30	Yes	Rifle	Squirrel	Putnam	Shooter shot self when he leaned his loaded rifle against a tree. The gun fell, causing it to discharge.
Sunday 11/15/92	22	Yes	Rifle	Deer	Marion	Shooter's gun caught on an object, causing the gun to discharge and shoot him.
Monday 11/16/92	16	No	Rifle	Squirrel	Bay	Victim mistaken for game. Blaze orange not worn nor required. FATAL
Saturday 11/28/92	35	No	Rifle	Deer	Walton	Victim mistaken for game. Blaze orange not worn nor required. FATAL
Saturday 11/28/92	48	Yes	Shotgun	Dove	Calhoun	Shooter loaded gun with the wrong ammunition causing it to blow up.
Sunday 11/29/92	15	No	Shotgun	Squirrel	Marion	Victim mistaken for game. Blaze orange not worn nor required. FATAL
Sunday 12/06/92	45	Yes	Handgun	Deer	Marion	Shooter shot self when bullet discharged from holstered handgun.
Saturday 12/19/93	43	No	Shotgun	Deer	Volusia	Victim was shot while hunting in turkey blind out of sight of shooter who was hunting deer. Blaze orange not worn nor required. FATAL
Friday 01/01/93	12	Yes	Rifle	Deer	Gulf	Father and two sons hunting, boys left in vehicle with loaded gun. The gun discharged, striking victim. Possible horseplay involved.
Saturday 01/02/93	49	No	Shotgun	Quail	Suwannee	Birds flushed, flew over shooter's head, shooter turned, fired and hit victim who was out of sight.
Friday 01/08/93	33	Yes	Shotgun	Deer	Marion	Shooter shot self when he dropped his loaded gun, which discharged.
Saturday 01/09/93	14	Yes	Rifle	Deer	Liberty	Shooter shot self while resting muzzle of rifle on his foot.
Saturday 01/30/93	40	Yes	Muzzle-loader	Quail	Manatee	Shooter shot self when getting into his vehicle with a loaded gun.

Day/Date	Age of Shooter	Self-Inflicted	Firearm	Game Sought	County	Circumstances
Wednesday 04/07/93	11	Yes	Shotgun	Turkey	Jefferson	Shooter shot self while walking with gun hammer cocked.He bumped the trigger, and the gun fired.
Friday 04/30/93	31	No	Rifle	Raccoon	Gadsden	While hunting raccoon at night, shooter mistook movement in tree as raccoon and shot victim.
Wednesday 06/16/93	17	No	Shotgun	Squirrel	Polk	Shooter hunting squirrel near his home fired and wounded victim who was standing in shooter's yard.

LEONARD LEE RUE III

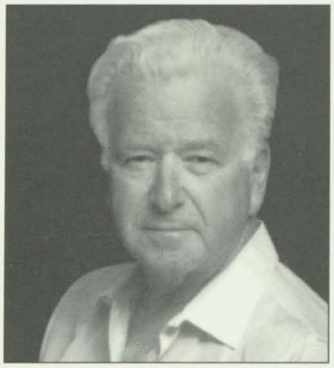
Conservation Update

Compiled by Janisse Ray

SUMNER BECOMES ASSISTANT DIRECTOR

William C. "Bill" Sumner has been named assistant executive director of the Commission. He has been director of administrative services since he began his career with the Commission in 1980.

Pete Joiner, in turn, has been promoted to director of administrative services, having served since 1990 as the assistant to that position. He began with the Commission in 1977 as an accountant.



NEW EDITORS FOR FLORIDA WILDLIFE

Dick Sublette has been appointed new editor of FLORIDA WILDLIFE. He succeeds Andrea Blount who has assumed editorship of *The Skimmer*. Sublette has held publisher and media management positions at the University of Illinois, UCLA, American Collegiate Network and at the Florida Flambeau Foundation.

Janisse Ray has been named assistant editor. She is a writer with a strong background in conservation.

HOW TO DONATE FOUR TIMES AS MUCH TO THE TORTOISE

The Gopher Tortoise Council announces an opportunity to quadruple contributions made toward the purchase of endangered upland habitats in south-central Florida. Through its Upland Habitat Protection Project, the Council will match all contributions (up to $5,000 total) received by March 1, 1994. Your doubled contributions will then be contributed to the Archbold Biological Station, whose board likewise has pledged to match all donations and to use 100 percent of these funds to purchase habitat adjacent to their existing preserve and research station. These lands support the Florida scrub jay, Florida mouse, gopher tortoise and a variety of other rare to endangered plants and animals.

Checks made out to the Gopher Tortoise Council should be earmarked "UHPP: Archbold Fund" and send to Dale Jackson, GTC-UHPP, c/o 1018 Thomasville Road, Suite 200-C, Tallahassee, FL 32303.

DO CONTESTS MAKE YOU SHUTTER?

If so, take a shot at this year's FLORIDA WILDLIFE photo contest, a competition open to color slides taken in Florida of wild, native species. Categories cover wild birds, wild animals and Florida's natural environment. Winning entries will be displayed in the September-October and November-December issues of the magazine. Winners also receive cash honorariums.

Watch for the official rules and entry form in the May-June issue. Entry forms must accompany each entry. Forms are also available by writing to FLORIDA WILDLIFE Photo Contest, 620 South Meridian Street, Tallahassee, FL 32399-1600. Please include a self-addressed stamped envelope with your request. Photocopies of the contest form are acceptable.

The deadline for the contest is June 15, 1994.

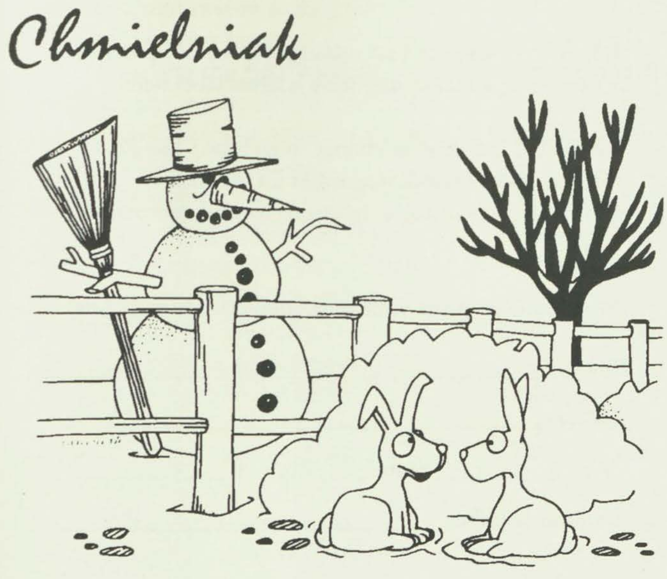
Conservation Update

CONFERENCE CALL

The Everglades Coalition's Ninth Annual Conference, to address protection and restoration of the Everglades ecosystem, is scheduled for Jan. 13-16, 1994 in Miami. For more information contact Everglades Coalition, c/o Lee Cook, Consultant, 411 Williams St., Tallahassee, FL 32303.

Another upcoming symposium will focus on the Indian River Lagoon, a coastal estuary in east central Florida, in order to develop a strategy for the protection of its biodiversity. The estuary hosts 35 endangered or threatened species and 26 species of special concern. The conference will be held Feb. 15-19 in Fort Pierce. For more information, contact Derek Busby, Indian River Lagoon, 1900 So. Harbor City Blvd., #109, Melbourne, FL 32901, telephone (407) 984-4950.

The annual conference of the National Wildlife Rehabilitators Association will be held March 2-6 in Delaware. For more information contact NWRA, 14 North 7 Avenue, St. Cloud, MN 56303, telephone (612) 259-4086.



"YOU DISTRACT HIM AND I"LL GO FOR THE CARROT"

DDT Linked to Alligator Decline

Pesticides in a large Florida lake appear to be linked to sexual deformities and a declining population of alligators, University of Florida researchers have found.

A study of Lake Apopka, near Orlando, involving the Florida Game and Fresh Water Fish Commission and the U.S. Fish and Wildlife Service, found that the lake's once plentiful alligator population has declined rapidly since 1980, when a spill of the pesticide Kelthane reached the lake from the former Tower Chemical Company, now a Superfund cleanup site.

Research shows that ingredients like DDT in Kelthane cause hormonal imbalances that result in reproductive problems, including small, abnormal testicles in male gators and turtles.

The decline of alligators in Lake Apopka has broad implications for other wildlife species and perhaps humans.

No Exotic Cockroaches, Please

Florida Agriculture Commissioner Bob Crawford is asking the public to help keep an exotic species of cockroach that is being marketed as a pet from becoming established in Florida.

The warning was prompted by recent confiscations of Madagascar hissing cockroaches from pet stores in Pensacola and Fort Myers.

The roaches, which can grow to 4 inches in length, are native to the island of Madagascar. In some states they have become popular as novelty pets but introducing any exotic species into a new environment could have unexpected results, Crawford said.

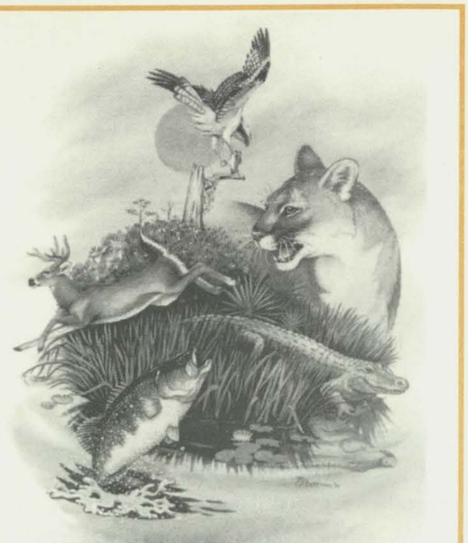
Though the insects may legally be brought into the country, Florida prohibits their possession without a permit. Anyone knowing of pet stores or individuals who have Madagascar hissing cockroaches should notify the nearest Florida Department of Agriculture and Consumer Services office, or call (904) 372-3505.

WILDLIFE ALERT

CALL TOLL FREE

Panama City	1-800-342-1676
Lake City	1-800-342-8105
Ocala	1-800-342-9620
Lakeland	1-800-282-8002
West Palm Beach	1-800-432-2046

Report Wildlife Law Violators and Polluters!



REGIONAL OFFICES
Florida Game & Fresh Water Fish Commission

Northwest Region
3911 Hwy. 2321
Panama City, FL 32409-1658
Telephone: (904) 265-3676

Northeast Region
Route 7, Box 440
Lake City, FL 32055-8713
Telephone: (904) 758-0525

Central Region
1239 S.W. 10th Street
Ocala, FL 34474-2797
Telephone: (904) 732-1225

South Region
3900 Drane Field Road
Lakeland, FL 33811-1299

Everglades Region
551 North Military Trail
West Palm Beach, FL 33415-1396
Telephone: (407) 640-6100

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Floridana

O.E. Frye Jr.
The Commission's First Biologist

It was a dark and stormy night in Atlanta in December of 1945. Bad weather forced a layover for a young Navy lieutenant and changed the course of conservation in Florida.

Ozro Earle Frye Jr. was stranded in the Georgia city while en route to Oklahoma with a fighter plane. During the spare time he had, he looked up a friend of a friend. That person, upon hearing Frye had a master's degree in wildlife management, suggested he check into a job possibility in Florida. Frye, soon to be released from active duty, did just that.

He walked into the offices of the Florida Game and Fresh Water Fish Commission only three years after the agency was formed and left the Commission as executive director 31 years later.

Frye was the first wildlife biologist the agency hired. He was directed to "find out about quail in South Florida." His initial assignment took him to Charlotte County, in what is now the Webb Wildlife Management Area. "Back then," he said, "the state of the art was such that we thought poor quail populations were frequently due to lack of breeding stock."

Frye organized a statewide quail trapping program. Utilizing Boy Scouts, conservation and sportsmen's clubs, quail were caught in urban areas throughout the state and released in the wild. It soon became evident that proper food and habitat, not stocking, were the key to plentiful quail.

Frye, as the solitary biologist of the Commission, realized early that more information was needed regarding management of Florida's wildlife if the valuable resources were to prosper. He recommended that the Florida Wildlife Federation endorse the hiring of more biologists by the Commission. Soon after, the staff of technically-trained Commission personnel began to grow, with turkey, deer and fish biologists joining the agency.

Frye was appointed chief wildlife biologist in charge of a statewide game management program. He approached large timber and cattle land holding companies to present a new idea in wildlife management.

His work bore fruit in 1948 when the Robinson Land and Lumber Company shook hands on a deal to open 120,000 acres in Gulf Hammock to public hunting, establishing the first wildlife management area.

Frye also had a hand in creating and fostering the Type II management areas. "Under this system the landowner, rather than the Commission, collects a fee from the sportsman, commensurate with the fee normally charged by the Commission," he wrote, "and we enforce mutually acceptable regulations."

In 1951, Frye was selected as assistant director of the Commission. He completed his doctorate in wildlife management in 1954. During this period, the Commission took strong stands on then-unpopular issues, such as the use of hard pesticides like DDT, stream channelization and the destruction of wetlands.

Frye was named the eighth director of the Commission in 1965 after serving under all the previous administrators. During his 12 years as Commission director, Frye never lost touch with the grassroots level of wildlife work – the species for which the Commission is responsible and the people the agency serves. He worked hard to raise enough money to purchase land for the Corkscrew Swamp Sanctuary. He also effectively lobbied for state and federal legislation for the acquisition of the Big Cypress National Preserve.

Frye believed that nothing would be possible in Florida conservation without the work of what he terms "the backbone" of the conservation movement – nonprofessional conservationists and their organizations.

He retired on June 30, 1977.